



Experiences and lessons learned from the UniBRAIN Agribusiness Incubation Programme

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IFRO Report



Experiences and Lessons Learned from the UniBRAIN Agribusiness Incubation Programme

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Preface

The purpose of this document is to facilitate learning from the experiences of the UniBRAIN programme, a unique and very ambitious endeavour implemented during 2010-2016 by FARA in five countries in Africa. We hope the result will be a useful as a source of inspiration for the African Agribusiness Incubator Network (AAIN), the commercial incarnation of UniBRAIN.

Several excellent best practice publications already exist, that outline what is, in general, considered good approaches to (agribusiness) incubator management. We have aimed to produce a lessons learned report that goes a step deeper and reflects the complexity that emerges when the creation and management of an incubator organization takes place in a partnership setting involving not only different organizations but organizations that origin in different realms of society – education, research and business.

We have drawn extensively on the input obtained from project participants at all levels of the incubator organizations. The recommendation are, to a large extent, the words of those who themselves were involved in the implementation of UniBRAIN.

The security situation in Mali has limited the access to data from the WAARI incubator. Whenever possible, we have tried to include this only representative of the francophone West African in the study.

The lessons learned report is not an evaluation, and we do not want to explicitly reflect on the performance of the UniBRAIN incubators and judge to what extent they have reached the objectives of UniBRAIN. Our concern is how things can be done as efficiently as possible in the future.

The authors

Copenhagen, July 2017

Disclaimer and Acknowledgements

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Executive Summary

The report, entitled “Experiences and Lessons Learned from the UniBRAIN (Universities, Business and Research in Agricultural Innovation) incubation programme” was commissioned by Danida and FARA with the aim to document the UniBRAIN programme participants’ experiences and the lessons they have learned during the, planning, establishment, and subsequent implementation of the UniBRAIN programme during 2010 to 2016.

The UniBRAIN programme aimed at fulfilling three objectives: 1) to support and commercialize agribusiness innovations; 2) to enhance university graduates’ entrepreneurial skills and employability; and 3) to share and upscale the programme’s innovative outputs, experiences and practices. To achieve these objectives the UniBRAIN programme introduced a unique business incubation model: the UniBRAIN model. This model relies on tripartite collaboration among universities, research organizations and private businesses to jointly operate co-owned business incubators with the aim to: a) encouraged multiple stakeholder collaborations to solve the complex and persistent problems facing the agricultural sector; b) encourage development of entire value chains; and c) utilize technological advances in both production and value addition activities.

The UniBRAIN programme was developed and implemented by Forum for Agricultural Research in Africa (FARA). Six Agribusiness Innovation Incubator Consortia (AIIC) were launched by the programme in Ghana, Mali, Zambia, Uganda and Kenya facilitated by a team of seven institutional partners: ANAFE, PanAAC, ABI-CRISAT, ASARECA, CCARDESA and CORAF/WECARD.

The report is based on programme participants’ identification of project elements that have worked well or been challenging. Based on these experiences, the report summarizes programme stakeholders’ recommendations regarding overall programme and AIIC design and management. In addition the report addresses issues related to the entrepreneurial ecosystem, agribusiness education, and impact and sustainability.

The main findings show that establishing agribusiness business incubators in an institutional environment with limited knowledge of the business incubation concept and practical experience in operating incubators is challenging. The tripartite rationale of bringing universities, research organizations and private businesses together to jointly operate business incubators has the potential to facilitate cross-sectorial collaboration on value addition and commercialization of new technologies, but the co-ownership governance model has also shown to be a challenging form of organization that requires substantial time and establishment of mutual trust to develop successfully. The initial funding and establishment of agribusiness incubators through a project-based approach and the subsequent transformation into viable business organizations also constitutes a leadership and management challenge. The UniBRAIN programme has been successful in achieving the results envisioned in the initial project document, but the ensuring long-term strategic direction and the establishment of sustainable business models at the AIIC level seem to be significant challenges. At the programme level, the main strategy for achieving sustainability and upscaling UniBRAIN experiences was the establishment of the African Agricultural Incubator Network (AAIN) – a network organization that, in many ways, resembles UniBRAIN but relies on commercial principles.

Summary of Key Lessons Learned

Introduction (Chapter 1)

The Universities, Business and Research in Agricultural Innovation (UniBRAIN) has pioneered a new approach to agribusiness incubation which enables universities, business and agricultural research institutions to commercialize agricultural technologies and produce graduates with entrepreneurial and business skills through public-private partnerships. The programme was launched in 2010 and has been financially supported by the Danish Development Cooperation (Danida) until March 2016. The programme was implemented by Forum for Agricultural Research in Africa (FARA) and facilitated by a team of seven partner institutions: ANAFE, PanAAC, ABI-CRISAT, ASARECA, CCARDESA and CORAF/WECARD. The six Agribusiness Innovation Incubator Consortiums (AIICs) constitute the backbone of the programme.

The UniBRAIN programme aimed at fulfilling three objectives:

- 1) To support and commercialize agribusiness innovations
- 2) To enhance university graduates' entrepreneurial skills and employability
- 3) To share and upscale the programme's innovative outputs, experiences and practices.

To achieve these objectives the UniBRAIN programme introduced a unique incubation model, the UniBRAIN model, in which: a) multi-stakeholder collaborations are encouraged to solve the complex and persistent problems facing the agricultural sector; b) value chains are fully developed; and c) technological advances are utilized in both production and value addition activities.

Danida and FARA commissioned this publication, to share information on the experiences, best practices and lessons learned of UniBRAIN's agribusiness incubation programme. The overall purpose of the report, as laid out by the terms of reference, is to "add value to the UniBRAIN implementation efforts by documenting best-practices and provide input to knowledge sharing between incubators, partners and AAIN."

The lessons learned report subscribe to the philosophy of participatory evaluation. The aim has been to deduce important learning points rather than conducting an externally driven evaluation. An external consultant team based at University of Copenhagen has collaborated closely with the UniBRAIN staff in order to design the applied methodology. We have used a range of techniques, including analysis of available project documents, internal reports and documents submitted to FARA and Danida; semi-structured interviews conducted with key stakeholders including incubatees, incubator staff, incubators' Technical Advisory Committees and members of the Board of Directors, policy makers and public authorities, donors, NGOs, and project partners. In addition, a survey was conducted with more than 80 incubator staff members, board members and incubatees. In the survey, we asked the respondents to articulate concrete advises to future incubator managers.

The report is of general interest to practitioners working with (agribusiness) incubation and aims to serve as a reference source for AAIN. The report will also be useful to institutional stakeholders looking to support innovative solutions to the challenges faced by agribusiness as it provides an

unbiased assessment of a large-scale attempt to institutionalize agribusiness incubators through a public-private partnership model.

Agribusiness Incubation (Chapter 2)

Following a renewed international focus on the economic development potential of the African agricultural sector, there has been a growing interest in finding approaches that can support, accelerate and sustain the development of agricultural innovation systems and promote the growth of agribusiness enterprises. Among other business development instruments, business incubators and public-private partnerships have been promoted as two important policy tools. The World Bank programme InfoDev and Indian-based ABI-ICRISAT are important proponents of the incubation model in the agribusiness sector.

In general, there has been an increasing worldwide interest in business incubation to promote entrepreneurship, innovation and economic growth. Typically, incubators provide the following services to the entrepreneurs and enterprises, i.e., the incubatees they serve: capacity-building, training, and mentoring services; technology testing and assessment, demonstration, and certification facilities; technology transfer and intellectual property policy advisory services; national and international networking and collaboration; policy advocacy and market intelligence; links to investors and other financing sources; and infrastructure and shared facilities (e.g., IT, office facilities, and prototyping workshop).

According to the US-based National Business Incubator Association, the largest professional organization in the field, the three activities most correlated to measures of client success are: 1) the delivery of client services, 2) developing networks internally and externally to the incubation programme, and 3) fundraising. In the context of agribusiness incubators, InfoDev emphasizes that success in terms of turning out sustainable businesses and achieving cost-effective operations is mainly a result of the basic incubator design and five other factors:

- Risk management
- Value chain integration
- Demonstration effects
- Adaptive scaling up
- Proactive business orientation

A substantial generic best practice and guidelines literature exists on how to plan, establish, and run incubators. In the following, we contribute to this generic literature by identifying lessons learned in relation to different aspects of the UniBRAIN programme: the programme level, the entrepreneurial ecosystem, the UniBRAIN tripartite partnership model, incubator management, impact and sustainability, agribusiness education, comparison of the UniBRAIN model to other agribusiness models, and the establishment of the African Agribusiness Incubator Network.

The UniBRAIN Programme – Key Lessons Learned (Chapter 3)

The overall programme approach:

- Balancing traditional project management (as required in a development project) and commercial business orientation is complex
- It is challenging to combine commercial and development objectives

- A bottom-up approach to establishing AIICs is time consuming, but it is the most likely way of achieving sustainable organizations
- While relying on programme-level service providers, consider when local versus global solutions are more preferable, for example, in relation to mentor network recruitment, technology scouting and university curriculum change
- Understanding the implications of the different incubation models is important, for example, incubation vs. acceleration, vocational training vs. entrepreneurship, incubation vs. cluster or value chain development approaches
- When AIICs are established, it is important to scale the organization and the core services according to the long-term financial frame and ensure that the generated competencies are retained in the organization, i.e., establish systems that optimize organizational learning and continuity. This speaks for lean projects with a longer time horizon than four years

Governance and organization:

- The implications of choosing a partnership model need to be well-understood
- It is important to ensure a clear understanding of the incubation concept among all involved parties

Programme cycle

- A four-year programme establishment phase is too short – the partnership formation can be a very complex endeavour and it takes time to establish effective working relations
- Phase divided implementation with distinct inception and implementation phases will allow the AIICs to progress according to the pace of local decision-making processes

Programme management

- It is important to streamline financial procedures to ensure both transparency and timely cash flow to facilitate business-oriented decision-making approaches
- Balance accountability vs. risk taking while considering the sources of funding involved

Programme-level partnership

- Selection of partners should be based on their documented experiences and track record
- Engaging well-connected and locally embedded programme-level partners contribute to a high likelihood of sustainable solutions and long-term impact
- Provision of universal concepts, models, SOPs, manuals etc. is very useful, but a ‘translation’ to the local context is necessary for successful adoption and actual implementation

Knowledge sharing and capacity development

- Awareness raising/sensitization is important due to limited general knowledge about the incubator concept at the policy level – but it is also important to ensure that training addresses specific incubation and management skills development for AIIC staff (practice level)
- Peer-learning should be supported and encouraged at all levels within a programme or project
- Programme-level partners who provide handholding is a constructive way of strengthening the local incubator but local contextualization is important

- Planning assumptions and taken-for-granted perceptions should be critically reviewed

Exit strategy

- It is a challenge to transform an organization established through a donor-funded project into a commercial business

The Entrepreneurial Ecosystem – Key Lessons Learned (Chapter 4)

- Partnerships and collaboration are key in providing incubation services and for achieving sustainability
- Both new and established incubators should continuously scan their ecosystem in order to identify potential sources of resources and synergies
- Linkage to other actors in the ecosystem can contribute with potentially important source of funding, collaboration and inspiration
- To gain legitimacy as a player in the ecosystem the incubators need to have a clear value proposition and focus on its expertise areas
- Incubators should strategically position themselves and their clients into the ecosystem
- Identify concrete opportunities for public and private support to entrepreneurs that incubators and incubatees can benefit from, for example, Engineers without Borders, World Challenge mentorship programme, the National Youth Fund, entrepreneurship awards, etc.
- New incubators can initiate linkages with their ecosystems based on pre-existing contacts at the individual staff level, but should increasingly rely on institutional contacts as the incubator becomes more established and gains legitimacy in the ecosystem
- Utilize the interest among public agencies in upscaling agribusiness incubation
- Engage with various parts of the universities and research institutions to build better links between incubators, scientists, researchers and the private sector
- Be aware that knowledge about incubation is very limited among other institutional players
- Incubator programmes should support their incubators with good practices on how to benefit from and contribute to the local entrepreneurial ecosystem

The Tripartite Partnership – Model Key Lessons Learned (Chapter 5)

Start-up and partnership development

- Find the right balance between preparation and capacity development (theory-driven) and experimenting with, reflecting on and learning from actual implementation (practice-based)
- The establishment of a cross-sectoral partnership (university, research, business) takes time, especially when new inter-organizational forms of collaboration are introduced into public organizations
- Ensure a common understanding of the incubation concept(s) among the partners
- The partner selection process is extremely important – make sure that competencies, capacity, motivation and engagement exist
- Ensure a joint and clear understanding of what each partner brings to the table and why they are necessary for success

Strategic decision making

- The tripartite UniBRAIN model brings together university, research organization, and private business partners and thereby offers unique opportunities but also contain potential challenges because of the partners' different institutional perspectives, missions and objectives
- Balancing for-profit and non-profit is difficult - however, non-profit incubators need to have clear for-profit activities in order to generate resources to support the non-profit ends and sustain the organization
- The physical location of the incubator is important – a poor location with difficult access means less customers and incubatees as well as poor networking
- Focus where you have expertise and can deliver high quality services

Business models and plan development

- Ensure integration between the overall strategy, the business model and business plans, and the operational systems to obtain profitability and sustainability
- Critically question the assumptions behind the models and plans
- Turning inventions into marketable products (innovation) is a costly process

Revenue streams

- Many NGOs support value chain development, technology transfer, entrepreneurship, etc. but few explicitly rely on incubation – this provides a business opportunity for agribusiness incubators
- AIICs can offer donor projects access to partner organizations' resources in an established and functioning inter-organizational framework. This ensures access to a unique combination of business experience and technology knowhow
- The non-profit label creates a negative incentive for customers to pay for incubation services

Structures and governance

- For AIIC partnerships to succeed, the sharing of responsibilities/benefits and costs/revenues needs to be clarified at the outset
- An MoU is not always enough – use relationship management and wise governance to ensure trust and harmony among partners
- Ensure clear roles and responsibilities for the BoD, TAC and incubator management
- Ensure that board members are trained in the role and function of a BoD
- Ensure that the CEO has sufficient discretion to manage and lead the incubator
- External board members can question taken-for-granted assumptions, provide an important outside perspective, and link to different networks and resources
- Partners should specify in advance the exit formalities for non-performing partners

Agribusiness Incubator Management – Key Lessons Learned (Chapter 6)

Managing the organization and relationships

- Recruitment of incubator staff is challenging – few professionals have knowledge of the incubation processes. Therefore, devote time, search widely, involve experts in recruiting, notably when identifying the incubator CEO

- Heavy administrative processes and management structures negatively impact performance – develop systems that support agile decision making and lean management
- Open and timely communication and clear distribution of roles between BoD, TAC, CEO and incubator staff is crucial for organizational efficiency

Managing resources

- Resource orchestration (identifying resources, bundling them into products/services, delivering them to customers) is a critical competence for the incubator CEO
- Resource orchestration enables the incubator to benefit from the resources available in the entrepreneurial ecosystem

Managing the incubation process

- Critically consider the implications for sustainability of who, you want as incubation customers – young people, university students, women, experienced entrepreneurs, and SMEs require different services and provide different revenue opportunities
- Clear communication of what the incubator can offer and an initial adjustment of incubatees' expectations is important
- Due diligence in the incubatee selection is extremely important – successful business incubation depends on the quality of the incubatees enrolled
- A realistic number of incubatees in a newly started incubator is probably closer to 5-10 than to 30 – consider the practical implications of servicing out-of-house (e.g., farmers) rather than in-house incubatees
- Individualized support to the incubatees is important – a general 'teaching/training' approach is of limited value for solving specific problems for unexperienced entrepreneurs
- Technical support for new product development, marketing and finance are difficult services to deliver – avoid over-promising and clarify the incubatees' own responsibility
- Access to funding for incubatees is a huge challenge – strategize for solutions and train incubatees in bootstrapping strategies
- Providing mentorship is a challenge – if no mentorship culture exists, then create your own culture within your network

Monitoring and evaluation

- Set goals and targets that are realistic
- Use simple and proven M&E tools
- Do not let the 'fear of failure' influence information exchange – share ideas and information on what works and what does not

Impact and Sustainability – Key Lessons Learned (Chapter 7)

Sustainability concept

- Full self-sustainability of a commercially-based incubator cannot easily (if at all) be attained in a period of less than 5-10 years – especially when the concept is new to the setting
- The business strategy must openly address which type of sustainability it is aiming for: capital based, cash flow, or strategic funding

- Incubators should avoid depending on one source of funding or revenue alone
- A bottom-up establishment process takes time, but is likely to be the most feasible way of achieving a sustainable tripartite partnership-based organization involving universities, research organizations, and businesses

Facilitating factors

- How to achieve a sustainable organization must be planned already during the project design phase – and plans must be critically assessed by experts in the field
- Incubator managers need a strong focus on revenue generation for sustainability and not only on funds utilization and accountability
- Sustainability requires a revenue generating business model independent of whether it relies on donor funding or profit generation
- The incubation model can provide a gap-filler between technology invention and technology diffusion (similar to the role of agricultural extension services)
- Integration of incubation processes in development projects represents a business opportunity for tripartite agribusiness incubators in the African context
- To attract funding, incubators need to show that they create value for their customers and clients. This requires an effective M&E system and trustworthy communication of the result
- Deep sector insight (in specific value chains) is an important competitive advantage and should form the initial starting point for tripartite agribusiness incubators
- The tripartite partnership model endows an incubator with social legitimacy that facilitates access to institutional partners, for example, the government or donor organizations

Limiting factors

- It is challenging to achieve financial self-sustainability if the incubator is mainly committed to a social development or educational mission
- Operating in a ‘project mode’ constitutes a challenge to achieving financial sustainability as a business organization – thinking in a (research or development) project logic does not foster business thinking
- Bridging technology, business and education forms a socially attractive value proposition, but incubators still need to prove that they can deliver results to attract additional resources

Enhancing Agribusiness Education – Key Lessons Learned (Chapter 8)

- Changing curriculum and educational systems is a long-term process
- Change processes in higher education institutions are highly dependent on local administrative routines and policy processes
- An externally initiated project-based and time-bound approach may have difficulties assuring changes in university curricula in the short term
- Involving ANAFE as the partner responsible for curriculum development has provided significant advantages in terms of providing access to specialized knowledge and experience in curriculum development in the African context

- As a well-established pan-African institution, ANAFE had the connections, legitimacy and interest required to engage in the long-term advocacy process needed to drive the change process in agribusiness education in Africa beyond the lifecycle of UniBRAIN
- Compared to an isolated project model targeting the UniBRAIN universities only, the involvement of ANAFE is likely to result in a much more profound long-term impact
- The UniBRAIN upscaling objective (#3) has been furthered through the synergy ensured through ANAFE's ability to leverage on and integrate UniBRAIN activities with other similar projects in its project portfolio, notably the SASACID project
- ANAFE's process has eased the implementation at the university level by ensuring widespread stakeholder involvement – which now may not be necessary to the same extent in the local curriculum adoption process

Comparison with other incubator types – Key Lessons Learned (Chapter 9)

- The tripartite partnership-based UniBRAIN model is a unique organizational construction for an incubator
- The UniBRAIN model integrates three types of incubators: value chain, commercialization, and technology transfer
- This is likely to constitute a significant challenge in terms of maintaining the sufficient focus and agreeing on a manageable scope for the incubator
- The AIICs seem to have had challenges identifying more advanced or innovative technological inventions that they realistically could involve in commercializing
- The low-tech domestic rural innovation facilitator seems to be in line with the scope of the UniBRAIN AIICs
- The broad thematic scope (development, education, business development) and partnership-based approach made it difficult for the AIICs to develop a focused business strategy

AAIN as African Knowledge Centre – Key Lessons Learned (Chapter 10)

- AAIN meets an existing need for a platform for knowledge sharing and collaboration among the incubation sector stakeholders across Africa
- AAIN can supervise new incubator founders on organizational design and governance principles, especially the pros and cons of the tripartite partnership model versus alternative forms of organization
- AAIN can play an important role by developing best practices and support incubators on how to develop sustainable business models and move from project funding to business-based service provision
- AAIN can service the incubator community by developing a simple, transparent, flexible, effective, and locally adaptable assessment system for incubators and incubatees
- AAIN can play an important role by developing best practices, educational programmes and individualized management training focused on topics such as entrepreneurship supervision and mentorship, business development support, financing, and technology commercialization
- AAIN can support African agribusiness incubators by providing them with a benchmarking system that enables incubators to compare themselves to other incubators

on key performance indicators in order to identify areas for potential performance improvement

Conclusion

In this report, we have, together with the stakeholders involved in the implementation of the UniBRAIN programme, identified numerous learning points that had significant impact on the course of events in the initial four years of the AIIC organizations. We believe that most of the findings listed above have a general application also in incubator organizations that are not based on partnerships or specifically targeting the agricultural sector.

Finally, we want to remind our readers that it is easy to state and conceptually grasp ‘best practices’ but first, what is best in one situation may not be best in a different context, and second, and maybe more importantly – ‘the devil is in the details’ – for example, there is a long way from understanding the need for and sketching out a business model to actually implementing one that is viable in practice. Best practices have little value if the human and social capabilities needed to establish and operate a successful incubator is lacking. This underlines the importance of the human and social dimension – the commitment, engagement, perseverance, collaboration and visionary leadership that we have witnessed among the founders and managers of the UniBRAIN agribusiness innovation incubator consortia.

Abbreviations

AAIN	African Agribusiness Incubation Network
ABI-ICRISAT	AgriBusiness Incubator at ICRISAT
ABP	Afri Banana Products
AgBIT	Agribusiness Incubation Trust
AGRA	Alliance for a Green Revolution in Africa
AIIC	Agribusiness Innovation Incubator Consortium
ANAFE	African Network for Agriculture, Agro-Forestry and Natural Resources Education
ASARECA	Association for Strengthening Agricultural Research in East and Central Africa
AU	African Union
BDS	Business development services
BoD	Board of Directors
BP	Business plan
CAADP	Comprehensive African Agricultural Development Programme
CCARDESA	Centre for Coordinating Agricultural Research and Development in Southern Africa
CCLEAR	Creating Competitive Livestock-Bias Entrepreneurs in Agribusiness
CEO	Chief Executive Officer
CORAF/WECARD	Conseil Ouest et Centre Africain pour la Recherche et le Developpement Agricole/The West and Central African Council for Agricultural Research and Development
CSIR	Centre for Scientific and Industrial Research
CURAD	Consortium for Enhancing University Responsiveness to Agribusiness Development
DANIDA	Danish Development Cooperation
DKK	Danish Kroner
EAYL	Earn as You Learn
EC	Executive Committee
EIA	Environmental Impact Assessment
EMRC	European Marketing and Research Centre
EWB	Engineers Without Borders
FARA	Forum for Agricultural Research in Africa
FSDA	Food Safety and Drugs Administration
GFIA	Global Forum for Innovations in Africa
ICRISAT	International Centre for Research in the Semi-Arid Tropics
ICT	Information and Communication Technology
IER	Researcher at Institut d'Economie Agricole
InfoDev	Information for Development Programme (World Bank Group)
IPO	Initial public offering
IPR	Intellectual property rights
IPR	Institut de Polytechnique Rural de Formation et de Recherche Appliquée
JKUAT	Jomo Kenyatta University of Agriculture and Technology
Ltd	Limited company
M&E	Monitoring and evaluation
MICS	Management Information and Collaboration System
MoU	Memorandum of Understanding
NBIA	National Business Incubator Association

NDA	Non-disclosure agreement
NEPAD	New Partnership for Africa's Development
NGO	Non-governmental organization
NIABI	Network of Indian Agribusiness Incubators
NUCAFE	National Union of Coffee Agribusinesses and Farm Enterprises
PanAAC	Pan African Agribusiness and Agroindustry Consortium
PC	Partnership Committee
PPP	Public-private partnership
QC	Quality control
R&D	Research and development
SADC	Southern African Development Community
SADC/FANR	SADC/Food Agriculture and Natural Resources
SC	Steering Committee
SDF	Skills Development Fund
SME	Small and medium enterprises
SOP	Standard operating procedures
SRO	Sub-regional Research Organization
SVCDC	Sorghum Value Chain Development Consortium
SWOT	Strength, Weaknesses, Opportunities and Threats (strategy tool)
TAC	Technical Advisory Committee
UAE	United Arab Emirates
UniBRAIN	Universities Business and Research in Agricultural Innovation
UNZA	University of Zambia
US\$	United States Dollar
WAAPP	West African Agricultural Productivity Project
WAARI	West African Agribusiness Resource Incubator
ZARI	Zambia Agricultural Research Institute

1 Introduction

1.1 Background

Agriculture is an economic engine for many African nations and there is a growing recognition that innovative solutions are needed to foster greater productivity and dynamism in the sector. Among other things, these solutions are required to enhance and increase commercial activities in the agricultural sector, to foster technological transformation, to address weak institutional and support structures, as well as to strengthen the capacity of actors within the sector. Agribusiness incubation is one such solution that has attracted increasing attention.

Agribusiness incubation is defined as a process, which focuses on nurturing innovative early-stage enterprises that have high growth potential to become competitive agribusinesses by serving, adding value or linking to farm producers. Agribusiness incubators are particularly helpful in assisting entrepreneurs through the early stages of their company development, accelerating the growth of formal enterprises, as well as formalizing and scaling up existing informal SMEs. The support that agribusiness incubators provide typically consist of capacity building in business knowledge and skills, facilitating the access to finance, network development, technology support services, marketing and access to mentoring.

The Universities, Business and Research in Agricultural Innovation (UniBRAIN) has pioneered a new approach to agribusiness incubation which enables universities, business and agricultural research institutions to commercialize agricultural technologies and produce graduates with entrepreneurial and business skills through public-private partnerships. The programme was launched in 2010 and has been financially supported by the Danish International Cooperation (Danida) until March 2016. The programme was implemented by Forum for Agricultural Research in Africa (FARA) and facilitated by a team of seven partner institutions: ANAFE, PanAAC, ABI-CRISAT, ASARECA, CCARDESA and CORAF/WECARD. The six Agribusiness Innovation Incubator Consortiums (AIICs) constitute the backbone of the programme.

The UniBRAIN programme aimed at fulfilling three objectives: to support and commercialize agribusiness innovations, to enhance university graduates entrepreneurial skills and employability, and to share and upscale the programme's innovative outputs, experiences and practices. To achieve these objectives the UniBRAIN programme introduced a unique incubation model in which: 1) multi-stakeholder collaborations are encouraged to solve the complex and persistent problems facing the agricultural sector; 2) value chains are fully developed; and 3) technological advances are utilized in both production and value addition activities.

Presently (Nov. 2016) the UniBRAIN programme and the six AIICs find themselves at a crucial transition phase from reliance on donor funding to becoming viable self-sustained commercial organizations as it was envisioned in the programme design. At the programme level, the main strategy for achieving sustainability and upscaling UniBRAIN experiences is the establishment of the African Agricultural Incubator Network (AAIN) – a network organization that in many ways resembles UniBRAIN but relies on commercial principles. Similarly, the six AIICs are presently challenged with the process of finding feasible ways of transforming themselves into self-sustained incubator organizations.

Thus, now is an opportune moment to reflect on the best practices and important lessons learned from the establishment and initial four years of the UniBRAIN programme and the six AIICs. These experiences can provide other individuals and organizations looking to engage in agribusiness incubation with insights that allow ‘replication’ of good practices and avoidance of potential pitfalls.

1.2 Objectives and Scope of the Report

DANIDA and FARA commissioned this publication, to share information on the experiences, best practices and lessons learned of UniBRAIN’s agribusiness incubation programme. The overall purpose of the report, as laid out by the terms of reference, is to “add value to the UniBRAIN implementation efforts by documenting best-practices and provide input to knowledge sharing between incubators, partners and AAIN.”

The report provides an insight into several aspects of the UniBRAIN programme. Broadly, in this report we aim to document:

- if and how the UniBRAIN networking and partnership model impacts incubator performance,
- the UniBRAIN programmes relationship with the wider community, describing how the incubation programme influences and is influenced by the external environment, including government policies, entrepreneurial ecosystem [...],
- lessons learned and best practices in relation to the development of the UniBRAIN agribusiness incubation model, as well as its partnership formation and incubation processes,
- lessons learned, challenges and possibilities especially in respect of the financial sustainability of the six incubators, and
- lessons learned and best practices of the UniBRAIN programme in order to facilitate the drive to upscale the platform using AAIN as leverage and potential sustainability-enhancer of the UniBRAIN model.

Based on these insights, we aim to facilitate knowledge sharing of experience for up-scaling successes across the six UniBRAIN incubators and thereby contribute to enhancement of the tripartite incubator model and contribute to communicate UniBRAIN experiences to a broader audience.

1.3 Intended Audience

The information found in this report is of general interest to practitioners working with incubation, and in particular agribusiness related incubation. More specifically, the publication aims to serve as a reference source for AAIN, who, building on UniBRAIN experience, foresees to evolve into a knowledge centre guiding the establishment of new agribusiness incubators across the African continent. The report will also be useful to institutional stakeholders looking to support innovative solutions to the challenges faced by agribusiness as it provides an unbiased assessment of a large scale attempt to institutionalize agribusiness incubators through a public-private partnership model.

The report does not necessarily reflect the opinions of Danida or FARA, but alone those of the consultant team.

1.4 Methodology

The report subscribes to the philosophy of participatory evaluation. The aim has been to deduce important learning points rather than conducting a rigid externally driven evaluation. An external consultant team based at University of Copenhagen has collaborated closely with UniBRAIN staff members in order to design the applied methodology. We have used a range of techniques, including analysis of available project documents¹, internal reports and documents submitted to FARA and Danida; semi-structured interviews conducted with key stakeholders including incubatees, incubator staff, incubators' Technical Committees and members of the Board of Directors, policy makers and public authorities, donors, NGOs, and project partners.

In addition, a survey was conducted with more than 80 incubator staff, board members and incubatees. In the survey we asked the respondents to articulate concrete advice to future incubator managers. It is our ambition that the participants' voices are heard as much as possible. To this end, we provide representative quotes throughout the report to summarize the lessons learned from multiple perspectives. Data collection was conducted during January-March 2016. The draft report has been circulated among key stakeholders and their comments have been integrated in the final document.

As it will be evident from the report, not every facet of incubation can be covered in this report. A relatively well-developed literature exists on the 'how-to' of agribusiness incubation². Most of this literature is rather summative and prescriptive. In chapter 3 we provide a brief overview of existing best practices. The aim is to provide a conceptual framework for the following chapters that explicitly address UniBRAIN experiences.

In this report we have chosen to focus on the challenge and opportunities that emerge when theory meets reality. We have not tried to imitate existing guidelines on how to implement (agribusiness) incubators, but rather the aim is to use the unique UniBRAIN experiences as a source of insight into the real-live complexity of incubation practices, and make the reader aware of where particular attention should be given to the contextualization of generic ideas in order to leverage on local organizational capabilities, institutional environments, and business opportunities. When we describe the specific experiences of the UniBRAIN incubators we refer to Agribusiness Incubator Innovation Consortia (AIICs). The generic terms 'incubator' or 'agribusiness incubator' are used when referring to more general best practices identified in the literature.

1.5 Structure of the Report

The remainder of this report is structured as follows:

- Chapter 2 provides a brief description of the general concept of business incubation and the specific nature of agribusiness incubation. We review the main experience in the field and introduce the main best practice documents addressing the topic.
- Chapter 3 gives a detailed presentation of the UniBRAIN programme and outlines the processes that led to the development of the programme. We describe the

¹ A list of documents consulted is enclosed as Appendix 10.

² See Chapter 11 Bibliography for a list of online resources.

programme's rationale and objectives, the organization and governance structures, the types and roles of its major partners and the type of activities performed by the programme coordination office and the partnership organizations.

- Chapter 4 introduces the concept of the 'entrepreneurial ecosystem' and discuss the importance of considering the opportunities and challenges related to the environmental setting when aiming at establishing and managing a business incubator.
- Chapter 5 introduces and discusses UniBRAIN's unique approach to agribusiness incubation – the tripartite partnership model. Here we discuss issues related to the AIIC formation and governance. Also, we pay particular attention to strategy formulation, business modelling and business planning, three important elements addressed in the incubators' establishment phase.
- Chapter 6 delves deeper into the process of agribusiness incubation management. Here we provide a general synopsis of the experiences gained in relation to management of the organization, incubation practices, and monitoring and evaluation.
- Chapter 7 summarizes the output achieved by UniBRAIN. We then discuss the concept of sustainability and identify elements that has contributed or hindered the AIICs in achieving financial sustainability.
- Chapter 8 provides a summary of the process of curriculum reform spearheaded by ANAFE and review the potential impact the activity has had in the partner universities and beyond.
- Chapter 9 compares the UniBRAIN model with other incubator programmes in the East African region.
- Chapter 10 looks at the process of upscaling UniBRAIN through AAIN. We identify the major players, their roles and responsibilities, AAIN strategy and outreach programme, its future outlook; as well as its opportunities and challenges.
- Chapter 11 provides an overview of online incubator guidelines, other relevant literature used in the report, and key publications developed by the UniBRAIN project.

2 Agribusiness Incubation

2.1 Background

This chapter introduces the concept of business incubation and characterizes the nature of agribusiness incubation. By doing so, we aim to provide a basis for reading the rest of the report, as well as enabling the reader to critically reflect on the presented lessons learned and to place these findings in a broader context.

The last decade has seen an increasing awareness of the potential of the African agricultural sector and there has been a growing interest in finding approaches that can support, accelerate and sustain the development of agricultural innovation systems in general as well as promoting the growth of the enterprises and organizations constituting these systems³. This has led to the introduction of a number of business development instruments, including tax incentives for R&D, business advisory services, business development service, business incubators, science and technology parks, industry cluster formation and public-private partnerships (PPPs). Although aiming at the same overall objective of supporting innovation-led economic growth and establishment of income opportunities, the specific instruments target different intermediate objectives including among others entrepreneurship training, business start-ups, business growth, commercialization of new technologies, market inclusion and value chain integration.

One development instrument that has attracted growing interest is *business incubation*. Business incubation is a mechanism for “effectively and sustainably accelerating the growth of start-up enterprises that bring innovative technologies and services to the market”⁴. Business incubators can support local development policies in several ways, for example by supporting⁵:

- Job generation
- Entrepreneurialism
- Local/regional economic development
- University-enterprise relationships
- Local/regional economy diversification
- Encouragement of entrepreneurialism among minorities
- Links between businesses and technological research and development
- Investment opportunities
- Encouragement for exports and internationalization
- The foundation for clusters and production arrangements, etc.

³ The World Bank. 2012. Agricultural Innovation Systems: An Investment Sourcebook. The World Bank, Washington, DC.

⁴ Ibid.: page 388.

⁵ Business Incubation Toolkit - iDISC Incubation Good Practice: Module 1 - Start an Incubator: <http://www.infodev.org/business-incubation-toolkit>.

Incubation is of special interest in developing economies because of the significant contribution from micro, small and medium-sized enterprises (SMEs) to employment and national economies. In the agricultural sector, incubators are seen as a means of overcoming structural and institutional difficulties of bringing new technologies, products and business models to the market. InfoDev⁶ identify the following missions as unique to agribusiness incubation:

- Identifying and adopting technologies appropriate for specific agribusiness enterprises
- Identifying and motivating entrepreneurs in agribusiness enterprises, frequently in rural areas
- Building commercial conduits in the form of value chains which integrate new value creating activities in rural and urban spaces

During the last decade the number of business incubators has expanded across the World, including in Africa. Typical incubators provide the following services to the entrepreneurs and enterprises, i.e., the *incubatees* they serve⁷:

- Capacity-building, training, and mentoring services
- Technology testing and assessment, demonstration, and certification facilities
- Technology transfer and intellectual property policy advisory services
- National and international networking and collaboration
- Policy advocacy and market intelligence
- Links to investors and other financing sources
- Infrastructure and shared facilities (e.g., IT, office facilities, and prototyping workshop)

Agribusiness incubators in developing countries service customer groups that distinguish themselves from traditional businesses in a number of areas. First, agribusinesses are confronted with a number of unique risks: commodity price risk, government farm policy risk, biological risks, weather and seasonality risks, and climate change risks. The small-scale farmer segment of agri-entrepreneurs typically holds limited assets and is characterized by being very risk adverse.

Second, farm-based agribusiness investments are difficult to finance due to low cash flow to equity ratios and long-term break-even points as well as a lack of knowledge about agribusiness within traditional financial institutions. Third, the agricultural value chain is often characterized by missing links between producers and market chains. Finally, agribusinesses in developing countries are often challenged by how to move from low value commodities to value added products in order to bring diversity into a market characterized by more stable prices.

On this backdrop, agribusiness incubators can play a range of important roles by helping small-scale farmers and other value and supply chain actors to organize competitive enterprises, link producers to processors, develop missing functions in the value chain, form partnerships along the value chains/value networks, support linkages to value chain integrators and large-scale resellers and assist clients in obtaining institutional support and funding. The roles that

⁶ InfoDev is a multi-donor programme in the World Bank Group's Trade & Competitiveness Global Practice that supports entrepreneurs in developing economies (see: <http://www.infodev.org/>).

⁷ InfoDev (www.infodev.org).

agribusinesses can play are diverse and may easily go beyond supporting individual entrepreneurial ventures.

Thus, establishing an agribusiness incubator can be a complex endeavour. The overall purpose of the incubator influences the kind of preferred institutional setup, for example, whether an incubator is for-profit or non-for profit-based; or whether a private, a public or a private-public partnership model is the best solution. Independent of whether the establishment of an incubator organization is driven by for-profit commercial interest or broader policy-driven development objectives, the organization is unlikely to become successful unless it responds to a demand in the market. Therefore, the World Bank recommends that incubators “*must be designed based on market demand, which is reflected in a detailed ten-year business model that outlines how the incubator will be sustainable.*”⁸ This statement emphasizes two important aspects: the time horizon of establishing an incubator and the sustainability requirement. Considering the special nature of the agribusiness sector and the structural challenges outlined above, it is widely recognized that establishing a sustainable agribusiness incubator organization is a long-term project.

When establishing an incubator three issues must be addressed:

1. Selection of the incubation model
2. Establishing of a successful management and governance system
3. Accumulating the appropriate physical assets

In the following sections, we will address the foundation for these topics by reviewing different types of agribusiness incubators, briefly presenting development paths of agribusiness incubators, and reviewing lessons learned regarding basic designs and management of incubators.

2.2 Incubator Models

Incubators can be categorized in one of three types: bricks and mortar, virtual or mixed⁹. In practice, notably in the agriculture and agribusiness sectors, the picture is very diverse. InfoDev¹⁰ has developed a typology of incubator models based on a world-wide case study including 12 agribusinesses incubators. InfoDev distinguishes between three general types of agribusiness incubation, including: a) Agribusiness value chain/sector development incubator, b) agricultural research and commercialization incubators, and c) technology transfer incubators. Table 2.1 lists sub-categories and defining features and specific examples of agribusiness incubators.

The *agribusiness value chain/sector development incubator* aims to develop entire agribusiness sectors and provide a range of services, integrating critical elements in the value chain, providing

⁸ The World Bank. 2012. Agricultural Innovation Systems: An Investment Sourcebook. The World Bank, Washington, DC. Pp. 389.

⁹ Business Incubation Toolkit - iDISC Incubation Good Practice: Module 1 - Start an Incubator. (<http://www.infodev.org/business-incubation-toolkit>).

¹⁰ InfoDev 2011. Growing food, products, and businesses: Applying business incubation to agribusiness SMEs. The World Bank, Washington, DC.

market access; and develop new enterprises that fill gaps in the value chain. The *agribusiness research and commercialization incubator* aims to facilitate the transfer of technology from universities and research centres, stimulate commercialization of research and creation of new enterprises; and foster diffusion of new technologies. The *technology transfer incubator* focuses at the low-tech or high-tech segment. Low-tech focused incubators target the grass root level and service innovation and entrepreneurship at small scale and in under-served areas. High-tech focused incubators support technology transfer across borders and across corporate boundaries in multiple forms of intellectual property (IP), contract manufacturing, joint technology ventures, and access to venture capital¹¹.

Based on an analysis of 12 case studies, InfoDev lists the following distinguishing features of incubators:

- Scale
- Business model
- Forms of public-private partnership
- Strategic affiliation
- Target clients and selection process
- Instruments for driving change
- Level of technology upgrading
- Organizational design
- Worldview

In the following we will briefly introduce these nine features as a basis for discussing the lessons learned presented in the rest of the report.

¹¹ InfoDev. Agribusiness Incubation Training Manual. Pp. 42.

Table 2.1 Agribusiness incubator (Source: InfoDev, 2011)

Tools and institutions	Defining features	Examples
Agribusiness value chain/sector development incubators		
Supply chain network manager	<ul style="list-style-type: none"> • Targets qualified smallholder farmers • Organized as supply chain manager • Active only in specific sectors where prior studies indicate comparative advantage exists • Profit oriented 	Fundación Jalisco (Mexico)
Farm to market chain franchisor	<ul style="list-style-type: none"> • Targets qualified smallholder farmers • Organized as supply chain franchise operator targeting specific sectors • Profit-oriented 	Timbali Industrial Incubator (South Africa)
One-stop agribusiness sector developer	<ul style="list-style-type: none"> • Large start-up endowment • Strong internal research capacity; professional management crops • Capacity to apply its own market and tech research, enterprise management, and equity funding to new business start-ups • Profit-oriented 	Fundación Chile
Entire sector incubator and BDS supplier	<ul style="list-style-type: none"> • Pragmatic and sector focused • Leverages BDS to transform entire sectors • Makes Strategic interventions at multiple levels within supply chains • Effectively engaged in policy reform both at high levels and at local levels • Mix of for-profit and non-profit 	Technoserve of Mozambique
Agricultural research commercialization incubators		
Agricultural technology oriented incubator with research centre affiliation	<ul style="list-style-type: none"> • High-tech focus • Strong affiliation with a world class research centre • Strong initial financial support • Classic research park incubator with strong affiliation with research centre • Non-profit oriented 	ABI-ICRISAT of India URI of Uganda
Business incubator with university affiliation specializing in agribusiness	<ul style="list-style-type: none"> • Strong affiliation with a university • Classic research park incubator with strong university affiliation • Enjoys only weak outside financial support • Non-profit oriented 	IAA-IPB of Indonesia
Technology-based business incubator	<ul style="list-style-type: none"> • Classic university spin-off business incubator • High-tech focus 	Technology Based Business Incubator, Fed. Univ. of Vicosa, CENTEV (Brazil)
Technology Transfer Incubators		
Low-tech domestic: rural innovation facilitator	<ul style="list-style-type: none"> • Rural low-tech and rural consumer focus • Links up innovators and entrepreneurs • Leverages multiple methods for promoting innovation • Weaver of strong networks • Visionary and dynamic leadership • Non-profit 	Villgro (India)
High-tech international: transnational strategic alliance	<ul style="list-style-type: none"> • High-tech focus • Classic value chain design • Strong capitalization • Clearly defined mission • Competent trans-national management • For profit 	MLSCF (Malaysia)

Agribusiness incubators can vary substantially in *scale* depending on the mandate and available resources. Similarly, incubators vary in the *business model* they apply, i.e., how they fund themselves and pursue financial objectives. Traditionally, three income streams are identified¹²:

- Revenue from tenants and other clients
- Revenue from sharing in client success by way of small equity positions or royalty agreements on gross sales and brokerage fees on raising finance
- On-going government or donor funding

In the 12 cases reviewed by InfoDev, all incubators were as a minimum fully externally funded for the initial five years. The type of internal revenue generating consisted of service fees, consulting fees, marketing fees, franchising fees, and rentals on infrastructure and facilities. Typically, income streams are difficult to establish during the establishment of the incubator, but becomes more effective as the incubator gains reputation and legitimacy among clients and stakeholders in its business environment. Over time, incubators may move from the revenue generating business model based on fees and rentals to a model based on capital gain through brokerage of finance, investment in successful incubatees through equity positions, profit sharing, and intellectual property rights and royalties on technologies developed through the incubator¹³. Taking equity can be a good strategy in high-growth companies with a clear exit strategy (IPO or trade strategy), otherwise, a royalty model is preferable. InfoDev stresses that these kinds of reliance upon success sharing with client companies have proven to be somewhat problematic “because it takes up to 10 years to realize returns and a portfolio of at least 20 companies is required to spread the risk, not to mention the high level of management expertise that is required.”¹⁴.

Public-private partnership is a means of leveraging limited funding in order to provide additional services. Two types of partnerships exist: *capitalized incubators* and *budgeted incubators*. Capitalized incubators are organizations that has obtained long-term funding (at least five year) through equity infusion or an endowment. Budgeted incubators depend on annual budgets of public sector partners or programme-specific grants. The capitalized incubator has more flexibility, can take more risks, and can act more independently, for example, by investing in incubatees. The budgeted incubator typically depends on the external funder, has less decision authority, and provides a more restricted service offer. Many incubators consist of a mix of the two models. The funding model affects the need for the incubator management to engage in fundraising and resource mobilization from outside partners.

Some incubators have a *strategic affiliation* with an organization, for example, a university or research centre. Such affiliations come with pros and cons. The close link to a university can provides access to knowledge, laboratories, and talented youth. On the other hand, the affiliation

¹² Business Incubation Toolkit - iDISC Incubation Good Practice: Module 1 - Start an Incubator. (<http://www.infodev.org/business-incubation-toolkit>).

¹³ InfoDev 2011. Growing food, products, and businesses: Applying business incubation to agribusiness SMEs. The World Bank, Washington, DC. Pp. 22.

¹⁴ Business Incubation Toolkit - iDISC Incubation Good Practice: Module 13 - Finance an Incubator. (<http://www.infodev.org/business-incubation-toolkit>).

may also constrain the flexibility of the incubator because the parent organization may have other objectives or agendas than the incubator.

Incubators also differ in which *target clients* they primarily service. Some incubators have a very narrow focus engaging with one type of farmers producing the same product whereas other incubators target a variety of incubatee categories and sectors. Some incubators focus on individual entrepreneurs or start-ups, some build up and sustain entire value chains, and some leverage entire agricultural sectors. Depending on the scope of operations of the incubator, potential target clients and collaborators can be first movers in a sector, farmer associations, and value chain integrators that allow the incubator to influence entire value chains.

Incubators may apply different *instrument* in order to influence their clients. These instruments are a combination of incentives and control mechanisms. In most cases, the core service includes a tailor made combination of business development services, mentoring and progress review. Upon enrolment in the incubator, the client together with incubator staff elaborates a development plan and commits on achieving the stated objectives. Underperformance often leads to exclusion from the incubation programme. The incubators may also influence their clients through providing matching grants or soft loans. Incubators can also invest directly in or take equity in their incubatees' enterprises.

InfoDev distinguishes between three types of agribusiness *technology upgrading*: High-tech, medium-tech, and indigenous technologies. High-tech technologies involved the application of cutting edge biotechnology and advanced plant and animal science. Application of high-tech solutions has high potential but is also very risky and difficult. It involved the transfer and management of intellectual property rights, which can be challenging in the institutional environment of developing countries. Medium technologies are focused on increasing the target group's productivity through making available already available technologies products and procedures; often in combination with an effort to enhance the functionality of the supply chain. Indigenous technologies are locally adapted or produced solutions. Developing new technologies may be quite demanding and require widespread support in terms of knowledge, funding and political support from the surrounding ecosystem to succeed.

The *organizational design* of the incubator must support two objectives: 1) provide support for clients, and 2) sustain the incubator as an independent business. Most incubators have three managerial levels¹⁵:

- *Board of Directors*: the BoD has representatives from each one of the organizations that participated in the incubator's formation and/or aided in making it operational, and/or provided economic/financial support.
- *Incubator Management*: the director/CEO of the incubator, the operational manager and his/her staff, which may include the secretary, mentors and tutors.

¹⁵ Business Incubation Toolkit - iDISC Incubation Good Practice: Module 1 - Start an Incubator. (<http://www.infodev.org/business-incubation-toolkit>).

- *Consultant Committee/Technical Advisory Committee*: specialized consultants who aid the manager in his/her task of orienting the companies

Incubators typically have a lean staff. A general principle applied across the InfoDev case studies is to “invest in key personnel and develop internal capabilities essential to the core incubation business, and develop strong partnerships with entities that are the very best at what they do.”¹⁶

Different incubators develop different *worldviews* based on the context in which they develop. The scope of the incubator, for example, whether operating with high-tech based enterprises in an international markets or focusing low-tech based upgrading small-scale farmers for inclusion in local supply chains may have significant impact on how the incubator sees itself and its role in the ecosystem. In the case of public-private partnerships, partners with different perspectives and organizational cultures have to work together, for example, when universities or research centres with well-established bureaucratic systems collaborate with private businesses that are typically more flexible and used to faster decision-making processes. The particular worldview and organizational culture adopted, in turn influence an incubator’s management style, communication, and the procedure developed.

Having introduced the defining features of agribusiness incubators, next we briefly review the lessons learned identified by InfoDev’s study of 12 agribusinesses¹⁷.

2.3 Incubator Development Pathways

As clearly illustrated in Table 2.1, the scope and objectives of agribusiness incubators can vary significantly. Some of the mentioned incubators have existed for more than a decade and have developed significantly over time. Moreover, to remain relevant for the entrepreneurial community, an incubator needs to develop and identify new focus areas as the surrounding business environment matures over time. InfoDev¹⁸ provides a useful overview of different development pathways that agribusiness incubators may adopt.

¹⁶ Ibid. Pp. 27.

¹⁷ Ibid. Pp. 45ff.

¹⁸ InfoDev. Agribusiness Incubation Training Manual. Pp. 42.

Box 2.1 10 Steps in installing the incubator business infrastructure

- Feasibility study and risk analysis regarding the likely success and specific management actions agenda for the incubator
- Development of a clear and comprehensive mission statement and corresponding set of results indicators
- Recruitment of a competent and inspired management team. Ideally, one with prior agribusiness experience at the executive level
- Initial fund raising
- Development of selection criteria and a selection process for accepting enterprises into the incubator
- Defining core business processes and developing system to support them. These systems would include accounting systems, budgeting systems, costing systems, and client activity monitoring systems
- Development of network connections sufficiently strong to generate desired deal flow
- Design of layouts and equipment for facilities suitable for supporting incubatees
- Selection of an independent board of directors which includes experienced, knowledgeable and principled persons of good characters
- Implementation of appropriate methods of corporate governance and management accountability assurance

(Source: Module 12 - Agribusiness Incubation. Training Manual. InfoDev. Pp. 96)

In most cases, an incubator goes through an early stage development phase that includes three types of activities:

- Install basic business infrastructure
- Prove ability to add value and to graduate incubatees
- Insert incubatees into business ecosystems

Box 2.1 illustrates the ten steps in installing the basic incubator business infrastructure. Although these steps may seem simple, they are often very complex in practice. We address these issues in more detail in the next section.

The second step in the development of an incubator is to demonstrate that it is able to add value to incubatees. This is obtained when incubated firms are able to demonstrate that they can generate progressively increasing levels of profit after graduation. Firms that leave the incubator typically have reached a stage where they have a product that has been tested in the market and the firm has started to generate limited revenues. This documents that the incubator is able to create value within the incubated firms through the services and mentoring provided.

The third development step identified by InfoDev involves the incubator's ability to demonstrate that it can successfully insert the incubated firms into the business ecosystem. At this stage, the post-incubation stage, the incubated firm is still very vulnerable and highly dependent on reliable suppliers, service providers and customers. The agribusiness incubator needs to have the sector knowledge and networks necessary to facilitate the incubatee's initial start-up phase until the firm becomes sufficiently experienced and robust enough to develop its own contacts.

Beyond these early stages, more mature incubators may engage in one or more of five alternative pathways for more advanced development and scale-up of agribusiness incubation. The five stages include:

- Innovation commercialization (incubate diverse SMEs)
- Focus on specific value chains or serial expansion of multiple value chains
- Enhance whole sector competitiveness

- Replicate the incubator
- Integrate and collaborate with the incubation ecosystem

InfoDev argues that a critical choice an incubator has to make is whether to specialize or remain open to diverse technologies and value chains. Some incubators choose to support commercialization of agribusiness innovations across multiple sectors. Other incubators develop a successful business model in one value chain and subsequent replicates it in other sectors, for example, in the form of a franchise model.

Some incubators reach a level where they are able to engage with the development of competitiveness at the agribusiness sector level. This kind of engagement requires an incubator organization with highly developed analytical capacity, management experience and leadership skills. Working at the sector level requires identification of competitive advantage and strategic opportunities. Incubators must be able to identify strengths and weaknesses at different nodes in the value chain and design interventions to enhance overall chain integration and competitiveness. The incubator must also be able to identify new technologies internationally and have the capacity to adapt these to local contexts. Sector development also requires the incubator to play a role in mobilizing and advocating for policy support necessary for institutional and structural changes. Moreover, such incubators should also be capable of acting as business brokers that connects and collaborates with different chain actors to develop national and international distribution channels, develop specialized service providers, and mobilizes public and private capital investments.

InfoDev argues that successful replication and scaling up through incubating new incubators “is the real proof of efficacy of the incubating approach to agribusiness development.”¹⁹ ABI-ICRISAT and Fundación Chile are mentioned as examples of such programmes. Finally, as InfoDev argues, as the business incubator and the business ecosystem matures the incubator is challenged to revise its focus to continue to stay at the forefront of the development and provide services that other agents do not yet provide.

In this section we emphasized the importance of new incubator organizations to initially focus on creating an effective organization as a basis for obtaining wider acknowledgement and legitimacy within the business environment. In the next section we will present and briefly discuss sources of best practice guidelines for incubator management.

2.4 Incubator Management Best Practices

A number of publications provide best practice management guidelines for incubator management. A very influential source of inspiration is the National Business Incubation Association (NBIA), one of the world’s leading organizations in advancing business incubation

¹⁹ Ibid. Pp. 99.

Box 2.2 NBIA Incubation Programme Best Practice Guidelines

Two principles characterize effective business incubation:

- The programme aspires to have a positive impact on its community's economic health by maximizing the success of emerging companies.
- The programme itself is a dynamic model of a sustainable, efficient business operation.

Management and boards of incubators, accelerators, etc. should strive to:

- Commit to the two core principles of business incubation.
- Obtain consensus on a mission that defines the program's role in the community and develop a strategic plan containing quantifiable objectives to achieve the programme mission.
- Structure for financial sustainability by developing and implementing a realistic business plan
- Recruit and appropriately compensate management capable of achieving the mission of the incubator and having the ability to help companies grow.
- Build an effective board of directors committed to the program's mission and to maximizing management's role in developing successful companies.
- Prioritize management time to place the greatest emphasis on client assistance, including proactive advising and guidance that results in company success and wealth creation.
- Develop the facility, resources, methods and tools that contribute to the effective delivery of business assistance to client firms and that address the developmental needs of each company.
- Seek to integrate the programme and activities into the fabric of the community and its broader economic development goals and strategies.
- Develop stakeholder support, including a resource network that helps the program's client companies and supports the program's mission and operations.
- Maintain a management information system and collect statistics and other information necessary for ongoing programme evaluation, thus improving a program's effectiveness and allowing it to evolve with the needs of the clients.

(Source: <https://www.inbia.org/resources/for-program-managers/program-best-practices>)

and entrepreneurship, whose best practice guidelines²⁰ are shown in Box 2.2. Some of the recommendations are overlapping with issues mentioned in Box 2.1 regarding installing the incubator infrastructure. Therefore, we review the NBIA guidelines with an emphasis on aspects of the ongoing operation of an incubator. After a brief review of these general guidelines we will return to recommendations specifically targeting agribusiness incubators. Another important source of best practices is InfoDev's Business Incubation Toolkit²¹. All of the above-mentioned sources draw on practical experience as well as the scientific literature in the field.

Principles

INBIA argues that successful incubation is based on two principles: first, an ambition to have an impact on the economic community surrounding the incubator, and second, the incubator's operations should be based on a dynamic model of a sustainable business operation. The first principle has implications for the scope of the strategic partnerships and alliances that an incubator

²⁰ The best practices are developed by NBIA, with credit to the book: Rice M. and Matthews J. (1995). *Growing New Ventures, Creating New Jobs: Principles and Practices of Successful Business Incubation*.

²¹ Business Incubation Toolkit - iDISC Incubation Good Practice: Module 1 - Start an Incubator. (<http://www.infodev.org/business-incubation-toolkit>)

aims to establish. Incubators can often leverage significantly on public and private partners' effort to promote entrepreneurship and business growth. The second principle seems highly relevant, but has in practice shown to be a challenge. Experiences have shown that very few business incubators are able to achieve financial self-sustainability in terms of generating continuous positive cash flows based on their core activities. In this perspective, a 'dynamic model' must reflect the nature of 'sustainability' relevant for the specific context of the incubator. High-tech incubators operating in a sector with low initial capital requirements for venture start-ups, fast product-to-market time and a potential for rapid scalability can reach financial sustainability much faster than an agribusiness incubator operating in a more traditional business environment. Moreover, incubators that aim to foster entrepreneurship among, for example, university students and graduates, are unlikely to generate substantial service-based revenues which may therefore justify continuous external funding. In general, the literature recommends that incubators adopt a commercial logic and strive proactively to become financially sustainable thereby providing a role model for their clients.

Consensus on mission

A prerequisite for achieving a joint effort during implementation is a common perspective on where the organization is headed. The mission statement is a critical element in guiding the ongoing development of the incubator and a necessary foundation for decision making and problem solving. Especially, in incubators managed in partnerships between different organizations, each with their particular interests, agreeing on a joint mission statement is crucial.

Strategic plan

NBIA recommends developing a strategic plan based on the overall aspirations outlined in the mission statement. The strategic plan should identify quantifiable outcomes to reach objectives and specify relevant indicators for measuring the achievement of outcomes. The strategic plan should answer the following key questions: what is the vision of the incubator and how does it position itself in the environment and in relation to competitors – in other words: in which direction will the incubator develop in the future. Especially, the strategic plan plays an important role in the case where incubators are initially funded by a donor but with the expectation of becoming financially self-sustainable within a limited time horizon. Strategic planning can be approached in different ways. Two major traditions are the inside-out and the outside-in perspectives outlined in Table 2.2.

Table 2.2. Outside-in versus inside-out perspective in strategic planning (Source: De Wit and Meyer, 2010)

Dimension	Outside-in	Inside-out
<i>Emphasis on</i>	Market over resources	Resources over market
<i>Orientation</i>	Opportunity-driven (external potential)	Strength-driven (internal potential)
<i>Starting point</i>	Market demand and industry structure	Resource base and activity system
<i>Fit through</i>	Adaptation to environment	Adaptation of environment
<i>Strategic focus</i>	Attaining advantageous position	Attaining distinctive resources
<i>Tactical focus</i>	Acquiring necessary resources	External positioning
<i>Competitive weapons</i>	Bargaining power and mobility barriers	Superior resources and imitation barriers

In practice, the development of an incubator strategy is likely to involve a mix of outside-in and inside-out perspectives. The so-called SWOT²² analysis integrates these two perspectives and is an easy to use approach often applied as an initial basis in a strategy process. Some examples of strategic issues include:

- Focus and type of incubator
- Ownership structure and the choice of lead organization when based on a partnership model
- Geographical location
- Which broader strategic policy/institutional framework to support and be part of a (either territorially orientated or focused on particular policy priorities)
- Whether the incubator is a stand-alone entity or works along-side other organizations
- How the incubator obtains a steady funding in the long-term.
- How an incubator becomes institutionalized over time
- Strategies for achieving financial self sufficiency
- Choice of revenue model, i.e., for-profit or non-profit

Business models

The business model is a highly relevant tool when designing incubators. The concept of business models has become almost synonymous with the widely used Business Model Canvas²³, but the literature on the topic is large and many alternative definitions exist. The business model is closely linked to the strategy but is not, in itself, a strategy²⁴. The business model is a means for conceptualizing the implementation of a strategy. The business model outlines the foundation for the operational implementation of the strategy in terms of an organizational design and business process model. The business model can be seen as the link between the strategy and the operative implementation or process management²⁵. The business model shows a simplified and aggregated representation of the incubators relevant activities and interactions. For example, if a for-profit incubator is developed, the business model must outline how sufficiently profits can be generated based on the business processes that are being implemented. Contrary to the more stable and forward-looking strategy, the business model depicts the present dynamic interaction between core components in the incubators business process and, by doing so articulates the core value

²² The SWOT analysis identifies Strengths and Weaknesses internal to the organization and Opportunities and Threats in the external environment. Based on a juxtaposition of the outcome of the analysis alternative strategies are developed that aim to benefit from organizational strengths to benefit from environmental opportunities (SO) or eliminate threats (ST), and eliminate internal weaknesses by benefitting from opportunities (WO) or avoiding external threats in organizationally weak areas (WT).

²³ Osterwalder A. and Y. Pigneur (2010). *Business Model Canvas: A Handbook for Visionaries, Game Changers, and Challengers*. Wiley: New Jersey. The *Business Model Canvas* is a visual tool that supports collaborative elaboration of business processes based on nine components: the core value proposition, target customer, distribution channel, customer relationship, value configuration, core competency, partner network, cost structure and revenue model.

²⁴ Wirtz, B.W., A. Pistoia, S. Ullrich and V. Göttel (2016). Business Models: Origin, Development and Future Research Perspectives. *Long Range Planning*, vol. 49, pp. 36-54.

²⁵ Ibid. Pp. 38.

creating processes. Thus, the business model is an excellent tool for answering questions regarding the financial success of the incubator.

Business plan

Several studies highlight the importance of a business plan during the start-up phase of an incubator. The business plan should state the mission and rationale of the incubator, target market and demand, operating framework, capital investment, running costs, funding sources, management structure and procedures, and other elements reflecting the operationalization of the strategy²⁶. NBIA emphasizes the importance for financial sustainability of designing and implementing a realistic business plan. It is argued that a reliable business plan provides “the operating framework in which to implement the programme’s value proposition, monitor financial performance through a consistent budgeting process, and apply sound accounting practices. The business plan, combined with continual monitoring, also provides the tools required to make operating adjustments when necessary.”²⁷ Box 2.3 shows the business plan outline proposed by NBIA.

Box 2.3 Business Plan Outline Proposed by NBIA

Following is a sample outline of an incubator business plan:

- Executive summary
- Mission and objectives
- Client focus
- Organizational structure
- Legal structure
- Board composition
- Services and programs
 - Services for incubator clients
 - Programs for entrepreneurial assistance
 - Business assistance providers
- Marketing, public relations, and client recruitment
 - Marketing and public relations plan
 - Client recruitment strategy
- Client application, selection, and graduation Process
 - Application guidelines
 - Selection and screening process
 - Sample application
 - Graduation policy
- Staffing plan
 - Staffing structure and job descriptions
 - Staff selection and training plan
- Facility
 - Description of the incubator facility
 - Technical requirements
- Budgets
 - Operating pro forma for at least two years

According to NBIA, financial self-sustainability implies that an incubator is able to cover expenses with predictable, reliable sources of funding or income. A *self-sustainable* incubator generates income that contributes to its operational budget; does not depend on a single source of external support; and makes sure that outside funding received is either reliable or replaceable. If the incubator is able to cover all expenses from their own operations, it is said to be *financially self-sufficient*. Most incubators depend on some sort of external subsidy to supplement their own income generation.

²⁶ Centre for Strategy & Evaluation Services (CSES) (2002). Benchmarking of Business Incubators. Final Report. The European Commission’s Enterprise DG, Brussels, pp iii.

²⁷ NBIA: http://www2.nbia.org/resource_library/peer/benchmark/resource_library/governance.php.

Feasibility study and risk analysis

According to Wikipedia, a feasibility study “aims to objectively and rationally uncover the strengths and weaknesses of an existing business or proposed venture, opportunities and threats present in the environment, the resources required to carry through, and ultimately the prospects for success. In its simplest terms, the two criteria to judge feasibility are cost required and value to be attained.”²⁸ The key issues to be addressed in the feasibility study include:

- Analysis of local conditions
- Identification of availability of economic and financial resources.
- Identification of the stakeholders
- Identification of justifications, benefits and advantages of implementing the incubator

InfoDev²⁹ provides a list of reasons for conducting a feasibility study. The incubator will benefit from the process because it can:

- Support consensus on the mission and goals of the incubator among local stakeholders
- Lead to identification of resources
- Aid problems-solving and creativity regarding how to reach objectives
- Provide a documentation of the early history of the incubator to staff coming on board at a later stage
- Ensure a critical review of strategy, business models and the business plan, including the realism of the underlying assumptions
- Enable the incubator to avoid ‘classical errors’ by reflecting on the best practice literature

Moreover, it is argued that the feasibility study is important because:

“Many political leaders, local business owners, and other civic leaders have just enough knowledge about business incubation to think of it as being ‘dangerous’. Conducting a feasibility study should include substantial community education. Otherwise, the project begins with hidden confusion as key people; attempting to do good things, base their decisions on an incorrect or incomplete concept of incubation that is out of sync with their colleagues’ concepts and with the informed practice of the incubation industry.”³⁰

Investing in an incubator is not only risky but also highly uncertain. In most developing countries’ limited experience and general knowledge exists on the nature and process of incubation. Moreover, in general, limited advice exists regarding how to efficiently assess the potential demand for services in the community. In addition, considering the nature of incubation as proactively operating on the border of not yet perceived needs and emerging opportunities, it

²⁸ Source: https://en.wikipedia.org/wiki/Feasibility_study.

²⁹ Business Incubation Toolkit - iDISC Incubation Good Practice: Module 1 - Start an Incubator. (<http://www.infodev.org/business-incubation-toolkit>).

³⁰ The list of reasons for conducting a feasibility study is adopted from Meeder, R.A. (1993). Forging the Incubator – How to Design and Implement a Feasibility Study for Business Incubation Programme. National Business Incubation Association: Athens, Ohio.

also seems a somewhat elusive task to assess with much precision the future demand. In this light, starting an incubator does not differ from much the challenges contemporary entrepreneurs face.

On the other hand, the inherent uncertainty does not excuse the incubator management from confronting this challenge. One strategy would be to apply scenario planning in order to prepare for alternative development pathways and support each of these scenarios with financial plans including sensitivity analysis of the most important cost and revenue factors³¹. Whereas this may not predict the future, it may prepare the decision makers to respond proactively to what will happen in the future.

Staffing

When staffing the incubator the following issues should be considered³²:

- Staff should be qualified to assist emerging companies, with the skills needed to help companies grow and succeed
- The incubator must have sufficient staffing to meet client needs
- Top incubator staff must excel in managing incubator operations and finances
- This incubator should make use of community mentors, business advisors and other experts to supplement services provided by staff
- This incubator's staff should be appropriately compensated
- This incubator should invest in professional development and training for management and staff

The reviewed best practices emphasize that the recruitment of an inspired, competent management team with entrepreneurial and/or executive level managerial experienced from sector-relevant commercial business is of significant importance for achieving successful establishment and implementation of the incubator organization and services. NBIA emphasizes the importance of the hiring process and argues that “hiring incubator management can make or break an incubator. Thus, it is extremely important that the BoD hires the highest quality staff, provide appropriate compensation and recognize succession planning as an important duty.”³³

NBIA and InfoDev argue that the incubator staffs, especially the CEO, are hired early in the incubator's development process. It is emphasized that the CEO and staff should not only be able to support their clients' growth processes, but also be capable of growing the incubator itself as a commercial enterprise. The CEO should have the ability to³⁴:

- Effectively market the incubator to potential clients, sponsors, and stakeholders
- Identify clients' needs, coach clients effectively, and facilitate their access to outside resources
- Work with the BoD to impart the incubator's vision and mission to the general public and, through the selling of that vision, enlist support

³¹ For an introduction to scenario planning, see: https://en.wikipedia.org/wiki/Scenario_planning.

³² NBIA: http://www2.nbia.org/resource_library/peer/benchmark/resource_library/staffing.php#2.

³³ NBIA: http://www2.nbia.org/resource_library/peer/benchmark/resource_library/governance.php#4.

³⁴ Business Incubation Toolkit - iDISC Incubation Good Practice: Module 1 - Start an Incubator. (<http://www.infodev.org/business-incubation-toolkit>).

Since incubators' typically have a lean staff, it is important to know the profile of competencies within the incubator staff and acknowledge the need for complementing with external expertise, for example, in terms of mentors and consultants where the incubator staffs are not experts.

On the other hand, research has shown that there is a correlation between the time spent with incubatees and the success of the incubator, especially the amount of time the incubator manager dedicate to interacting with client firms. NBIA's best practice recognizes the need to "prioritize management time to place the greatest emphasis on client assistance, including proactive advising and guidance that results in company success and wealth creation."³⁵

When considering the size of the staff in an incubator, it is relevant to consider strategies for maintaining flexibility in the staff size and competence profile, allowing the incubator to meet varying levels of activities and emerging needs as it develops over time. Engaging business mentors, external experts and former incubatees is one feasible strategy, but also a strategy that requires relationship management and oversight from the incubator management.

In many cases, finding staff with explicit experience in incubation is difficult, if not impossible. Therefore, training at home and abroad is an important element in the development of qualified staff. Likewise, assuring proper remuneration of staff and managers is a prerequisite for building a qualified and sustainable professional team.

Board of Directors

Most incubators have an organizational structure consisting of a Board of Directors, the incubator management and staff, and a committee consisting of technical experts and mentors. This technical committee is named Technical Advisory Committee (TAC) in the UniBRAIN governance structure.

The Board of Directors has a number of roles, including:

- Setting strategic direction
- Defining the policies of the incubator
- Approving operational procedures of the incubator
- Evaluating the performance of the incubator
- Helping qualify the incubator's services
- Supervising of the management and resolution of administrative questions that are beyond the purview of management
- Supporting the incubator's operation through the board members' networks
- Helping embed the incubator programme in the community and promote the incubator's services
- Moreover, the Board is often responsible for defining criteria for pre-selection and final identification of businesses that are admitted access to the incubator.

³⁵ NBIA: http://www2.nbia.org/resource_library/peer/benchmark/resource_library/servicing-clients.php.

Best practices emphasize that the incubator and BoD should have a clear mission and statute in order to avoid interference in management and divergent objectives between board members themselves and managers³⁶. This is also supported by clearly defining and communicating the incubator's internal procedures. InfoDev highlights a golden rule that, "the BoD is generally responsible for policy development and not day-to-day operations, which are left to the incubator manager".

NBIA recommends that incubators identify main partners and invite them to join the board, but also be ready to remove inefficient board members. Board members may include the following types of professionals: (1) graduate firms (i.e., former incubatees); (2) experienced entrepreneurs; (3) local economic development officials; (4) corporate executives; (5) representatives of the finance community; (6) business lawyers and intellectual property experts; (7) university officials; and (8) chamber of commerce representatives. As study by NBIA shows that incubators, who have graduated firms on the BoD are more likely to be successful³⁷.

In addition to a Board of Directors most incubators have a consultant committee or TAC. This committee consists of technical staff and experts that provide services, as consultants, mentors or experts to the incubator and incubatees.

Develop facility, resources and methods

From the range of incubation models presented in Table 2.1, it is obvious that the type of facilities that an agribusiness incubator develops may vary substantially and depends on its value proposition, business model and overall strategy. In relation to traditional business incubation, the services that are statistically significantly related to the performance of the client firm include³⁸:

- Providing entrepreneurial training (from business basics to comprehensive training in managing a new enterprise)
- Offering increased access to investment capital
- Securing strong supportive relationships with local area higher education institution(s)
- Providing production assistance (from R&D and prototyping through to engineering production systems)
- developing strong mentor programmes (e.g., shadow boards, loaned executives, periodic engagement with incubator managers, participation in programme activities)

According to InfoDev³⁹, agribusiness incubation provides the same core services with the addition of shared facilities and equipment. In many developing countries, where start-up funding for capital investments is scarce, access to low cost certified production facilities is a highly needed service that an incubator can provide.

³⁶ <http://www.infodev.org/business-incubation-toolkit>.

³⁷ Lewis, D. A., E. Harper-Anderson and L. A. Molnar (2011). *Incubating Success: Incubation Best Practices That Lead to Successful New Ventures*. University of Michigan: Ann Arbor, p. 10.

³⁸ Ibid. Pp. 11-12.

³⁹ InfoDev. *Agribusiness Incubation Training Manual*. Pp. 34.

In designing the facilities, incubators should consider the choice of location, size, and whether to build new or renovate existing facilities. Location is partly defined by the clients' location and the need for interacting with other companies and stakeholders. Facility size depends on the functions included in the incubator, but a size that allows the incubator to create an inspiring working environment where incubatees, staff and stakeholders have opportunities to meet and interact is essential. Facility size is related to costs and revenue streams that have implications for long-term sustainability. A physical location incurs maintenance cost but also enables the incubator to charge rentals for office space and use of workshops and production facilities.

Seeking integration into the broader ecosystem/business community is a key strategy to obtaining resources of sustaining and growing the incubator organization as well as for developing stakeholder support/resource network for clients. EU⁴⁰ recommends that incubators should be promoted by an inclusive partnership of public and private sector stakeholders and that business incubator partnership structures should reflect regional technology and business support strategies. The research by EU suggests that incubators are typically promoted by a wide range of organizations from the public and private sectors including local authorities, universities, companies, and financial institutions. Public authorities have an important catalytic and leadership function, and can provide crucial start-up investments during the development phase of incubators.

Developing standardized procedures, routines and methods is crucial for obtaining a professional organization. According to EU⁴¹ "... adoption of a business-like approach to running incubators and monitoring clients, is crucial to performance and best practices in this field are becoming standardized."

The central element in an incubator management system is its strategic management process. Box 2.4 shows the elements in this process. For each of the topics, appropriate guidelines or standard operations procedures should be developed.

2.5 Success Factors

The three activities most correlated to measures of client success are 1) the delivery of client services, 2) developing networks internal and external to the incubation programme, and 3) fundraising⁴². Elaborating on this in the

Box 2.4 Main topics in an incubator's strategic management process

Each of the following topics should have appropriate guidelines:

- Planning, Monitoring and Assessment
- Marketing, Management and Public Relations
- Financial Management
- Raising Funds
- Operations/Management
 - Contracting Outsourced Services
 - Procurement
 - Basic Support Offered to Incubated Enterprises
- Human Resources Management
 - Process for Hiring Employees
 - Personal Growth and Development Process
 - Motivational Instruments

⁴⁰ Centre for Strategy & Evaluation Services (CSES) (2002). Benchmarking of Business Incubators. Final Report. The European Commission's Enterprise DG, Brussels, p. 84.

⁴¹ Ibid.

⁴² NBIA: http://www2.nbia.org/resource_library/peer/benchmark/resource_library/governance.php#4.

agribusiness incubator context, InfoDev emphasizes that success in terms of turning out sustainable businesses and achieving cost-effective operations is mainly a result of the basic incubator design and five other factors. In this section we introduce the five factors and the incubator design factors are addressed in the subsequent section on management and governance systems:

- Risk management
- Value chain integration
- Demonstration effects
- Adaptive scaling up
- Proactive business orientation

Incubators need to have core competencies within *risk management* that enable them to help their incubatees reduce and manage risks. As mentioned earlier, an inherent characteristic of agriculture-based business is a high level of risk. Among other types, incubatees incur technology, market and management risks. InfoDev finds that the most important type of risk in relation to incubation is that the management team of the start-up does not possess the necessary management skills to launch successfully the venture.

InfoDev identify three overall strategies to help clients mitigate risks: technology-based, institution-based, and networking-based strategies. Technologically improved crops can reduce biological and climatic risks. Institutional arrangements, such as franchising schemes and support in product certification can help ensure markets and stable prices. Networks and linkages with other supply chain actors can give access to finance, knowledge, mentorship, and facilitate market access.

Value chain integration is paramount for successful incubation in many developing countries because farm-to-market chains and distribution channels in many cases are absent. Often, the most critical challenges exist at the farm and market end of the chain. Applying a value/supply chain approach forces the incubator to consider holistically aspects of supply security, product quality, production costs, consumer preferences, logistics, retail channels, financing, competition etc. Several of the InfoDev case incubators apply a value/supply chain approach, for example, by identifying competitiveness-enhancing interventions based on analysis of the competitive advantage of relevant value chains.

The *demonstration effect* is an important means of upscaling the impact of an incubator's positive results. By initially demonstrating and communicating the feasibility and sustainability of a particular business model or approach, the incubator establishes the external interest necessary for subsequent upscaling. Demonstrating successful results helps establishing the incubators reputation, and attracts resources and partnerships.

InfoDev argues that *scaling up* and *replicability* is the real test of efficacy of the incubating approach to agribusiness development.”⁴³ The ability of an incubator programme to successfully engage in incubating new incubators is the ultimate indicator of a successful approach. On the

⁴³ Ibid. Pp. 47.

other hand, incubators develop in unique environments and spin-offs from existing incubators need to adapt to the unique features and opportunities in their own business environment. Adaptiveness enables the incubator to benefit from maintaining a dynamic competitive/collaborative relationship with other participants in the local agribusiness sector and entrepreneurial ecosystem.

Typical agribusiness incubator clients do not have basic business skills or contacts and networks that can support them in developing their ventures. This makes a *proactive business orientation* a key feature of the agribusiness incubator. The incubator must be able to provide advanced support in developing clients' business models and marketing initiatives. Incubator managers must be highly active in developing networks and identifying resources necessary to serve the needs of the clients, including, for example, facilitating access to inputs, finance, and laboratory services, supporting compliance with regulatory standards, and identification of markets and distribution models. Due to the small size of their organizations, incubators can rarely internalize the full range of needed expertise and therefore have to rely on external contacts and resources in order to provide the best possible service for their clients.

3 The UniBRAIN Programme

Key Lessons Learned – The UniBRAIN Programme

Overall programme approach

- Balancing project management and commercial business orientation is complex
- It is challenging to combine commercial or development objectives
- A bottom-up approach to establishing AIICs is time consuming, but it is the most likely way of achieving sustainable organizations
- While relying on programme-level service providers, consider when local versus global solutions are more preferable, for example, in relation to mentor network recruitment, technology scouting and university curriculum change
- Understanding the implications of the different incubation models is important, for example incubation vs. acceleration, vocational training vs. entrepreneurship, incubation vs. cluster or value chain development approaches
- When AIICs are established, it is important to scale the organization and the core services according to the long-term financial frame and ensure that the generated competencies are retained in the organization, i.e., establish systems that optimize organizational learning and continuity. This speaks for lean projects with a longer time horizon than four years

Governance and organization

- The implications of choosing a partnership model needs to be well-understood
- It is important to ensuring a clear understanding the incubation concept among for all involved parties

Programme cycle

- A four-year programme establishment phase is too short – the partnership formation can be a very complex endeavour and it takes time to establish effective working relations
- Phase divided implementation with distinct inception and implementation phases will allow AIICs to progress according to the pace of local decision-making processes

Programme management

- It is important to streamline financial procedures to ensure both transparency and timely cash flow to facilitate business-oriented decision-making approaches
- Balance accountability vs. risk taking while considering the sources of funding involved

Programme-level partnership

- Selection of partners should be based on their documented experiences and track record
- Engaging well-connected and locally embedded programme-level partners contribute to a high likelihood of sustainable solutions and long-term impact
- Provision of universal concepts, models, SOPs, manuals etc. is very useful, but a ‘translation’ to the local context is necessary for successful adoption and actual implementation

Knowledge sharing and capacity development

- Training has focused on awareness raising/sensitization due to little general knowledge about the incubator concept in the African context (policy level) – but it is also important to ensure that training addresses specific incubation and management skills development for AIIC staff (practice level)
- Peer-learning should be supported and encouraged at all levels within a programme or project
- Programme-level partners who provide hand-holding is a constructive way of strengthened the local incubator – but local contextualization is important
- Planning assumptions and taken-for-granted perceptions should be critically reviewed

Exit strategy

- It is a challenge to transform an organization established through a donor-funded project into a commercial business

In this chapter we address the experiences and achievements gained at the overall programme level – the UniBRAIN facility and partnership level. We first provide a short presentation of the result of the lessons learned survey. The result will be addressed throughout the chapter when appropriate. We then introduce the *UniBRAIN Model* and the programme-level organization and briefly present the programme cycle during 2010 to 2016. We then review the main elements of the programme-level management including financial management, planning and M&E processes. Next, we introduce the UniBRAIN programme-level partners and document how the UniBRAIN networking and partnership model has impacted AIICs' performance in terms of capacity and knowledge sharing. Finally, we review UniBRAIN's exit.

Table 3.1 shows a quantification of the topics mentioned by interviewees in the Lessons Learned Survey in relation to UniBRAIN programme management practices. In the 'aspects that worked well' category the main issues mentioned included UniBRAIN programme design, technical training provided for the AIICs, and the programme level partnership collaboration. Major categories identified in relation to 'challenges during implementation' include funds disbursement, the UniBRAIN programme design, the M&E system, governance, and the UniBRAIN facility's support to AIICs. In terms of 'recommendations for future incubator projects', programme design, M&E, funds disbursement, partnership collaboration, and the facility's support to AIICs are the main topics.

Table 3.1 Programme level management practices mentioned by respondents in the Lessons Learned Survey.

UniBRAIN partnership aspects	Worked well	Challenges	Recommendations
Pretext (historical background for the programme)	1	-	-
Choice of programme level partners	1	2	2
UniBRAIN facility's communication with AIICs	-	2	1
Curriculum development activities	1	3	-
Exposure of the UniBRAIN Model	1	-	-
FARA's objectives	-	1	-
Programme level leadership	2	3	1
Monitoring and evaluation	2	7	10
Operational procedures and systems	-	-	2
UniBRAIN facility's funds disbursement	2	24	9
Programme level partnership collaboration	3	-	9
Programme level partnership governance	-	4	-
UniBRAIN programme design	9	19	47
UniBRAIN facility's support to AIICs	2	4	8
Technical training provided for AIICs	5	2	4

3.1 The Process that Led to the Development of the UniBRAIN Programme

As a major contributor to the economies of most African countries, agriculture can play a role in achieving continental priorities, such as food security, job creation and economic development. Yet, despite of its potential, in many cases the sector remains woefully underdeveloped.

The renewed emphasis on agricultural development in Africa⁴⁴ has led to the formulation of various policies, frameworks, and interventions aimed at transforming the sector from one of low productivity to one in which agricultural yield matches the continent's potential output. For instance, the major decisions, related to agricultural development, that were laid out in the Maputo Declaration⁴⁵ calls for:

- Improved agricultural productivity, leading to an average annual growth rate of 6 %
- Renewed investments in the sector and the allocation of 10 % or more of the country's agricultural budget
- Development of dynamic intra and extra-national agricultural markets
- The integration of farmers into the market economy, with focus on providing improved access to the export market
- The equitable distribution of wealth
- The development of agricultural science and technology
- Environmentally friendly agricultural production and the sustainable management of the natural resource base

All the members of the AU and signatories to the Maputo Declaration are expected to implement CAADP, which aims to “help African countries reach a higher path of economic growth through agriculture-led development, which eliminates hunger, reduces poverty and food insecurity, and enables expansion of exports⁴⁶.” By ratifying CAADP, the goal of African governments is to usher in a new era of agricultural development. However, in this new era both challenges and opportunities are present. The challenges are accentuated by the fact that the development process requires large scale investments into the sector. Likewise, issues such as climate change, unemployment and gender equity, among others, will influence whether the objectives set forth in the CAADP are met or not. On the other hand, opportunities arise from the possibilities for incorporating technological advances. Given that technology can circumvent the technical, institutional or infrastructural constraints, African nations need a scientific and technological underpinning to maintain sustained agriculture productivity.

On this backdrop, the Danish government convened in 2008 the African Commission⁴⁷ with the goal to help Africa benefit more from globalization. The commission focuses on five concrete thematic areas: African competitiveness, investment finance in Africa, young African entrepreneurs, sustainable energy and post-primary education and research.

⁴⁴ World Development Report 2008. The World Bank:

http://siteresources.worldbank.org/INTWDR2008/Resources/WDR_00_book.pdf.

⁴⁵ AU 2003 Maputo Declaration on Agriculture and Food Security: <http://www.nepad.org/resource/au-2003-maputo-declaration-agriculture-and-food-security>.

⁴⁶ <http://pages.au.int/caadp/about>.

⁴⁷ Growth and Employment: Vision at Work. Progress Report of the Danish African Commission, July 2010.

In 2009 the African Commission proposed a number of initiatives, including the UniBRAIN programme. The objectives of the UniBRAIN programme are shown in Box 3.1. The main objectives are job creation and income generation through development of the agribusiness sector. The overall idea is to achieve this objective through enhanced technology commercialization through partnerships between universities, research organizations and private businesses; and to enhance agribusiness education to enable graduates' to become more entrepreneurial and business oriented.

In the next section we will introduce the partnership concept as a backdrop for the following discussion the partnership experiences gained by the UniBRAIN programme as well as by the UniBRAIN AIICs in Chapter 5.

Box 3.1 UniBRAIN programme's objectives and main outputs

UniBRAIN's *development objective* is:

- to contribute to enabling African countries to create jobs and raise incomes through sustainable agribusiness development.

UniBRAIN's *immediate objective*, which is also its value proposition, is:

- to enable universities, business and agricultural research institutions to commercialise agricultural technologies and produce graduates with entrepreneurial and business skills through agribusiness incubator partnerships.

This will be realised by:

- Output #1: Commercialisation of agribusiness innovations supported and promoted.
- Output #2: Agribusiness graduates with the potential to become efficient entrepreneurs produced by tertiary educational institutions.
- Output #3: UniBRAIN's innovative outputs, experiences and practices shared and up-scaled.

(Source: UniBRAIN Project Document)

3.2 The Partnership Concept

“UniBRAIN is built on a public-private framework with regional and global outreach and is an exceptional example of the global partnerships envisaged in MDG8.”⁴⁸

A partnership is a particular type of collaboration agreement between individuals or organizations. The defining elements of a partnership are *mutuality* and *organizational identity*⁴⁹. Partnership as a governance model is a relative practice, but in its fullest expression the partnership has the following features:

- Jointly determined goals
- Collaborative and consensus-based decision making
- Non-hierarchical and horizontal structures and processes
- Trust-based and informal as well as formal relationships
- Synergistic interaction among partners

⁴⁸ Unibrain Project Document.

⁴⁹ Brinkerhoff, D.W and J.M. Brinkerhoff (2011). Public-private partnerships: Perspectives on purposes, publicness and good governance. *Public Administration and Development*, 31, pp. 2-14.

- Shared accountability for outcomes and results

There are different reasons for relying on partnerships. In the UniBRAIN context, two aspects have dominated: a) the partnership is a means for enhancing efficiency and effectiveness through reliance on comparative advantages of the different partners, and b) the partnership is a means of providing through the partners the resources and solutions required by the scope and nature of the problems being addressed⁵⁰.

The partnership model requires mutual respect for the distinct competence and capabilities of individual partners as well as the partners' mission, value and unique identity. The partnership facilitates access to both hard resources (money and materials) as well as soft resources (managerial and technical skills, information, contacts, and credibility/legitimacy) and partners are chosen because they have something special to offer. If the partners do not fulfil their role, or retain their identity, i.e., the comparative advantages that justify their presence in the partnership, the rationale that justify the extra effort required for maintaining the partnership disappears.

Brinkerhoff (2002)⁵¹ provides an excellent and comprehensive framework for assessing partnerships. A detailed assessment of the seven partnerships (one at programme level and six at AIIC level) is beyond the scope of this report, but we will discuss salient issues that have been highlighted during the participant interviews and survey. We hope that the assessment framework in addition can be useful for self-evaluation among partners in existing partnerships, and that it can provide a useful basis for inspiring new partnerships regarding which dimensions to consider in developing their collaboration. The prerequisites and success factors to effective partnership relationships are outlined in Table 3.2. Partnership functionality will be facilitated by partners being willing to share power, meet the partnership's need (rather than the partners' own needs). Moreover, there should be champions that promote the partnership both internally and externally. Factors that lead to success include trust in other partners, confidence in each other, clear goals for the partnership, mutual understanding of other partners missions and goal and the ability to manage conflicts constructively. It is also important that partners can meet performance criteria and that implementing actors receive top-management support for the partnership activity.

Partnerships have different intensities, i.e., degrees of partnership. Table 3.3 outlined the dimensions that characterize the degree of partnership. Two dimensions are involved: mutuality and organizational respect. Mutuality refers to the degree of equality in decision making, exchange of resources, reciprocity, transparency, active participation, respect for each other and to which degree benefits are shared. Organizational respect involves to which degree central dimensions of the different partners' organizational identities are mutually recognized and the degree to which, and with what effect, this identity is influenced by the involvement in the partnership.

⁵⁰ Ibid. Pp. 4-5.

⁵¹ Brinkerhoff, J.M. (2002). Assessing and improving partnership relationships and outcomes: a proposed framework. *Evaluation and Programme Planning* 25, 215-231.

Table 3.2 Prerequisites and success factors in partnership (Brinkerhoff (2002)).

Prerequisites and facilitative factors
<ul style="list-style-type: none"> • <i>Perceptions of partners' tolerance for sharing power</i> • <i>Partners' willingness to adapt to meet partnership's needs</i>: Receptivity to new solutions; flexibility in taking corrective action; accommodation of special requests, responsiveness to unforeseen situations • <i>Existence of partnership champions</i>: existence of champions within each partner organization and within the partnership as a whole; focus of champion's advocacy (internal to partner organization, within partnership, external)
Success factors from the literature
<ul style="list-style-type: none"> • <i>Trust</i>: Character-based and competence-based • <i>Confidence</i>: Standard operating procedures, contractual agreements and their degree of formality • <i>Senior management support</i>: Direct participation; provision of resources and support to organization members participating in the partnership • <i>Ability to meet performance expectations</i>: External constraints; partner capacity • <i>Clear goals</i>: Consistent identification of partnership goals and mission; regular partner meetings to review, revise, and assess progress in meeting identified goals; share common vision for the partnership; mutually determined and agreed partnership goals • <i>Partner compatibility</i>: Knowledge and understanding of partners' mission, operations, and constraints; previous conflict or confrontations among partners • <i>Conflict</i>: Degree; frequency; extent of conflict avoidance within partnership; presence/absence of one or more dominating partners

Table 3.3 Degree of partnership (Brinkerhoff (2002)).

Mutuality
<ul style="list-style-type: none"> • <i>Equality in decision making</i>: Democratic procedures; satisfaction that all views are considered; joint determination of programme activities and procedures; process for determining division of labour and risk/award balance • <i>Resource exchange</i>: Relative balance; nature of resource exchange • <i>Reciprocal accountability</i>: Regular reporting among partners; access to performance information; financial controls balanced with administrative imposition; joint design of evaluation/assessment • <i>Transparency</i>: Established channels for continuous dialogue and information sharing; timely response to information requests; sharing of relevant information beyond specified agreements/requirements • <i>Partner representation and participation in partnership activities</i>: Participation in planning and review meetings; programme activities; partner satisfaction with opportunities to participate; rules governing who can represent the partnership within what limits • <i>Mutual respect</i>: Consideration of partners and convenience in the planning of meetings and other organizational requirements; recognition of indispensability of each partner including unique strengths; shared understanding of respective partner drivers • <i>Even benefits</i>: Perception of fairness; satisfaction with benefit distribution; satisfaction with the criteria for benefit distribution
Organizational respect
<ul style="list-style-type: none"> • <i>Determining partner organization identities</i>: Mission; major strengths and weaknesses; primary constituents; underlying values; organization culture; methods for assessing mission attainment and maintenance of all of the above • <i>Organization identity within the partnership</i>: Perception of threats or compromises of organization identity within the partnership; nature of organization adaptations/adjustments in order to effectively promote and participate in the partnership; perception of partners adjustments in response to expressed concern about organization identity; extent to which organization has changed as a result of partnership participation and quality of that change; influence of partnership work on partner organizations' service quality and responsiveness to core constituencies; influence on and use of core constituencies; perceptions regarding the extent of mutual adaptation; perceptions of overall impact of partnership work on organization identity

Table 3.4 lists the outcome of the partnership relationship. Outcomes relate to three dimensions: partners' perception of value-added, that partners meet their objectives and the effects on the partners' identity.

Table 3.4 Outcomes of the partnership relationship (Brinkerhoff (2002)).

Value-added
<ul style="list-style-type: none"> • Qualitative synergistic outcomes of program • Quantitative synergistic outcomes of program • Linkages with other programs and actors • Enhanced capacity and influence of individual partners; other multiplier effects
Partners meet own objectives
<ul style="list-style-type: none"> • <i>Satisfaction with progress in meeting identified drivers</i> • <i>Qualitative and quantitative evidence of meeting drivers</i> • <i>Enhanced performance in pursuing own mission</i> • <i>Enhanced performance in satisfying constituencies</i>
Partners identity
<ul style="list-style-type: none"> • <i>Partnership organization culture</i> • <i>Values</i> • <i>Partnership mission, comparative advantages, value-added</i> • <i>Name recognition (e.g. stakeholder feedback, publicity, logo, web page)</i> • <i>Partnership constituencies</i>

Table 3.5 identifies dimensions for evaluating partners' performance: the degree of compliance with expected or agreed roles and other partnership members' satisfaction with a partner's performance a critical. Moreover, partners will be evaluated on whether they go beyond the expected performance and take responsibility beyond the call of duty.

Table 3.5 Partners' performance (Brinkerhoff (2002)).

Partner assessment and satisfaction with their partners' performance
<ul style="list-style-type: none"> • <i>Compliance with expected and agreed roles</i> • <i>Satisfaction of partners with each other's performance</i> • <i>Partner performance beyond the call of duty (i.e., extra-role behaviour)</i>

In the following section we will discuss the UniBRAIN partnership formation.

3.3 The Partnership Formation

Based on the interviews with project participants, the following issues in relation to the UniBRAIN partnership experience were highlighted:

- How the partnership was formed
- The characteristics of successful partnering
- The choice between partnership and service provider mode

3.3.1 The Formation of the Partnership

The UniBRAIN programme was developed over a short period of time. This influenced the initial identification and selection of partners. The limited time for establishing the partnership seems to have resulted in the team being set before agreement on a common mission, goals and

implementation mode was reached. This in turn resulted in tension and uncertainty regarding the roles within the team and eventually resulted in a change in participants when one partner left the programme and was replaced by another. This is partly a result of the programme mode and specific political process through which UniBRAIN was created. In general, it is crucial for the efficiency and effectiveness of a partnership that the right partners are included and that partners have a joint understanding and agreement on objectives and the principles guiding how to reach these objectives. Thus, adequate time and resources should be invested in identifying the right participants for the partnership, and it is important to verify that programme partners must have the institutional capacity to fulfil the role envisioned. Programme designers should conduct due diligence in verifying that potential partners have the experience and capabilities required to fulfil their role.

3.3.2 *Characteristics of Successful Partnering*

A clear overlap between different partners' missions is a prerequisite for achieving the engagement and synergies that lead to efficient partnering. Participants in a partnership are expected to proactively contribute resources and ideas to contribute to joint problem solving. Contrary to projects, the substance of partnerships is typically less well-defined from the outset. This requires that partners actively collaborate to innovate and develop their joint activities which in turn require certain competencies and capabilities and the organizational capacity to implement and sustain activities over time.

The partnership concept clearly worked successfully in the case of ANAFE and ABI-ICRISAT. The UniBRAIN objectives fitted perfectly with the missions of both organizations. ABI-ICRISAT has been an ideal partner to FARA and the AIICs with the necessary knowledge and organizational capacity to provide relevant support during the programme implementation process. At the same time, ABI-ICRISAT had an interest in expanding their activities in Africa, and UniBRAIN has been an ideal partner for this purpose with its Objective #3 focusing on continued upscaling. This is also illustrated from the fact that FARA and ABI-ICRISAT have further expanded their collaboration, for example, through a new incubator programme funded by the Government of India where the aim is to establish five new agribusiness incubators.

UniBRAIN's educational reform mission (Objective #2) is a perfect fit with the mission of ANAFE. Through UniBRAIN, ANAFE has been provided with the resources for staging a collaborative curriculum development process that resulted in exemplary agribusiness curricula developed through a wide-spread stakeholder consultation process. For UniBRAIN, partnering with ANAFE gave access to relevant expertise and a legitimate platform for engaging in the curriculum reform. Moreover, the partnership has resulted in a much broader impact than could otherwise have been achieved by UniBRAIN alone. ANAFE has diffused and promoted the new agribusiness curriculum through their network and it has been adopted in several universities outside the UniBRAIN framework. Moreover ANAFE has been able to leverage on UniBRAIN project funding by integrating activities across their project portfolio.

The partnership concept seems to have worked less successful in the case of PanAAC. Although the organization managed to lead the organization of the mentorship programme for some time it eventually failed to sustain the activity. This is largely attributed to the limited capacity of the core organization that seems to have been a one-person organization organizing an international contact person network supplemented with external consultants when specific tasks need to be managed. Although the mission of PanAAC seems related to the AIIC activities, in reality, and

contrary to ANAFE and ABI-ICRISAT cases, the role PanAAC was supposed to play was not similar to daily activities conducted by the organization. In addition, it can be questioned if the assumption that the provision of business mentors for incubatees and access to country specific knowledge on laws and regulations is best organized by an international partner or managed locally by the AIICs.

The SROs have played an important role, although somewhat limited. In principle, their missions seems to partly overlap with UniBRAIN objective of promoting innovations, but the SROs are embedded in the research and extension sectors, rather than the commercial agribusiness sector. In Mali, CORAF and Institute of Agricultural Economics have jointly developed a series of leaflets presenting business models for agriculture-based products. This collaboration was the first concrete project between the two organizations. In other situations, specific outputs, for example, consultancy reports have been outsourced by the SROs to external experts, indicating limited organizational capacity or knowledge gaps.⁵²

In conclusion, successful partnering depends on mission overlap, common goals, alignment between existing activities and competencies and the joint activity, and organizational capacity to engage in the implementation. Based on the mixed results obtained, it can be asked if the partnership modality was the right choice of a model for establishing a supportive framework for the development of the AIICs? Or could other types of organizations have provided the same or better results?

Considering the phase out strategy to create an independent FARA-owned business or trust to continue and upscale the UniBRAIN activities after the finalization of the initial four-year funding, it seems a wise decision to choose to establish a partnership. Successfully developed, a partnership would provide a broader foundation for continuing upscaling. Contrary to a fixed programme or project approach that would have been seen as a time-bound activity limited to the project duration, the partnership could develop into an open-ended joint venture where the partners continue collaborating as long as mutual benefits are created. Ideally, the initial funding provided by Danida could over time be replaced by resources provided by the partners. But, in practice, this vision was not what was designed for in the programme document. Although a transformation from a donor funded programme to a self-sustained independent commercial organization was envisioned, it was not expected to be a joint (business) venture among the partners, but a sole FARA-owned or controlled entity, which has probably provided a disincentive for other partners' long-term engagement.

3.3.3 The Choice between Partnership and Service Provider Mode

The partnership model is more complex to manage for the lead institution than a traditional project organization. Some interviewees warn against using the partnership model because it locks the lead organization in with a specific set of collaborators. A traditional project organization where collaborators are engaged as subcontractors enables more flexibility management, as

⁵² Odame, H. and E. Kangai (2013). An inventory of technologies for commercialisation under the UniBRAIN initiative. Draft Report prepared by Centre for African Bio-Entrepreneurship for Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA).

subcontractors can be replaced if they do not live up to expectations. The decision to use a partnership or a traditional project mode is context dependent. The UniBRAIN case illustrates both the strength and weakness of the partnership model. One more flexible approach could be to let subcontractor relations evolve into partnership collaboration if this appears beneficiary to the involved parties.

3.4 The Overall Programme Approach and Strategy

The UniBRAIN programme was a fully South-driven programme. The concept for the programme was proposed by FARA as a solution to challenges identified by the Danish African Commission. The implementation of the programme was managed by FARA in partnership with a number of international partners. The overall programme strategy was to establish a partnership-based UniBRAIN consortium providing the necessary support for the development of six agribusiness innovation incubator consortia (AIIC) based on the UniBRAIN model in five countries.

The uniqueness of *the UniBRAIN model* is its tripartite nature that involved three types of actors – universities, research organizations and the private sector – in an effort to solve the major development challenges of job creation and economic growth. As an incubation model, the UniBRAIN model is unique in addressing this development agenda through an integration of educational reform, technology commercialization and business development.

The rationale underlying the tripartite model was that universities educate the new generation of agri-entrepreneurs and agribusiness managers. Therefore, universities need to update their curricula to enable the graduated to address contemporary challenges in the agribusiness value chain thereby enhancing graduates' employability and entrepreneurial capacity. The AIICs are a means for providing support to graduates that engage in business start-ups. AIICs also provide a mechanism for bringing university students into contact with real agribusiness sector through internships and attachments in start-ups and SMEs engaged with the incubator. Moreover, the AIICs provide a space for university teachers and researchers to engage with the agribusiness sector, for example, through their engagement in technical consultancies for the AIICs' customers. Ideally, the university staff will bring experiences obtained through such interaction back into the classroom providing a basis for revising their teaching according to the needs of the sector.

Research organizations are known to have challenges with the commercialization of their inventions. New technologies and new knowledge are often not having the potential impact because of the lack of uptake and utilization by the private sector. In the UniBRAIN model, the research organizations are envisioned as the providers of technologies that can be commercialized by start-ups enrolled in the AIICs. Research organizations can also contribute other resources, such as laboratories, field stations for crop testing and expertise to support the AIICs' incubatees and other customers. Finally, the business partners ensure the commercial perspective in the AIICs' operations. They provide experience in commercialization processes and business development and they can influence the traditional institutional partners with a more dynamic perspective.

3.5 Governance and Organizational Structure

The organizational structure of the UniBRAIN programme is shown in Figure 3.1. The organogram shows the UniBRAIN Facility embedded in the FARA secretariat.

UniBRAIN was headed by a Steering Committee (SC) comprised of FARA programme committee and UniBRAIN programme partners. A donor representative participated in the SC as observer. The SC meets semi-annually. The UniBRAIN Executive Committee (EC) comprised of the FARA Executive Director, the FARA Deputy Executive Director, the FARA Director of Finance, and the FARA Director for Capacity Strengthening. The EC attend to day-to-day management decision and meet at least quarterly. The FARA Director for Capacity Strengthening was the main responsible for the implementation of the programme.

The Facility Coordinator was heading the facility staff consisting of a Programme Officer, an Accountant and a Community Manager. The Coordinator was responsible for technical and operational coordination. The UniBRAIN partners were formally linked with the UniBRAIN Facility as financial beneficiaries of the donor grant, and linked to the facility and facility staff through networking and technical support relations. The UniBRAIN Partnership Committee (PC) constituted a forum for coordination among the programme partners. Finally, the AIICs were formally linked to FARA as beneficiaries of the donor grant as well as linked to all other partners through networking and technical support relations.

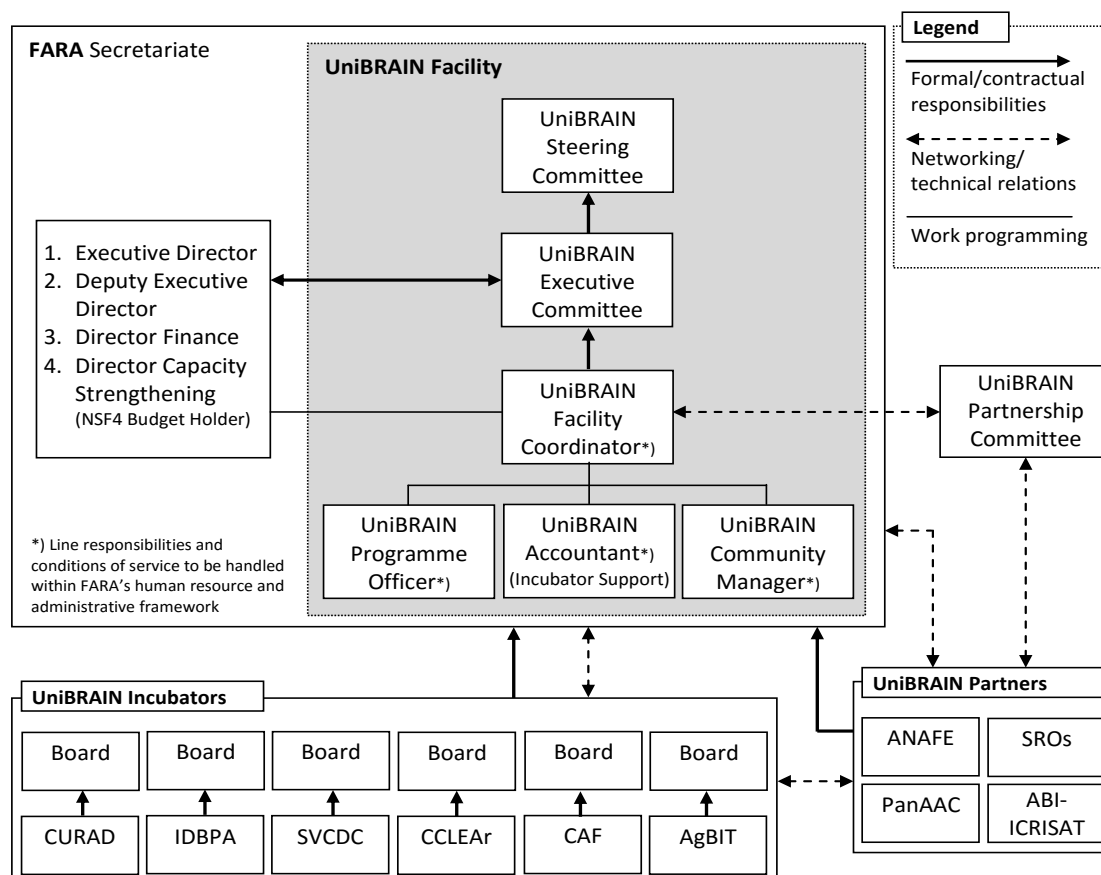


Figure 3.1. Organogram of the UniBRAIN programme (Source: UniBRAIN project document).

In the following, we provide a summary of the main tasks of the different actors in the governance structure. The summary provides an overview of the types of tasks that must be considered when organizing an incubator programme and is thus useful as a backdrop for the subsequent discussions⁵³.

The SC performed various roles; among others they approve detailed work plans and budgets and subsequently reported for the respective UniBRAIN partners and the UniBRAIN facility as a whole. They also received and commented on incubator plans and budgets and subsequent reports. The SC decided on the inclusion of and support to new incubators and/or the termination of agreements with already supported incubators. The SC also decided on recommendations made by programme reviews and they review, commended, and/or adopt audit reports. The project document also states that the SC was responsible of constantly monitoring and supporting the development towards UniBRAIN sustainability.

The EC among other roles approved incubator procedures and manuals and approved consolidated work plans and budgets before submission to the UniBRAIN Steering Committee. The EC also discussed and approved grant releases as recommended by the UniBRAIN Facility Coordinator. They recruited the UniBRAIN Facility Coordinator and provided operational guidance and framework to the UniBRAIN Facility Coordinator. The EC approved monitoring and evaluation reports and approved the reports of external and internal reviewers.

The UniBRAIN Facility Coordinator was responsible for monitoring and supervising the UniBRAIN partners and incubators. The coordinator maintained and further developed the monitoring and evaluation system; to facilitate networking and develop the UniBRAIN brand. The coordinator was responsible for day-to-day technical coordination and for achieving programmatic targets, quality assurance and adherence to timelines. The coordinator provided leadership for resource mobilization for maintaining and expanding the UniBRAIN Facility and for helping the incubators and incubatees in developing and realising their financing strategies.

The UniBRAIN facility comprised of an accountant, a programme officer and a community manager. The accountant was responsible for developing budgets, funding requests and financial reports in collaboration with the Facility Coordinator and for providing accounting and financial management mentoring and coaching to the UniBRAIN partners. The accountant was also responsible for financial monitoring and supervision of UniBRAIN partners and incubators and for facilitating the processing of funds requests and payments; as well as ensuring that the financial information required for sound management and for appropriate advice and decision making is available to the FARA. The Programme Officer was the administrative liaison between the UniBRAIN Facility and the FARA Secretariat. The officer was responsible for facilitating the consolidation of plans and budgets as well as subsequent annual and periodic reports including reports required for reviews. The officer also monitored the information being entered on the UniBRAIN MICS and ensured that the data and information required for M&E was kept up to date and correct. The Programme officer was also responsible for capturing and disseminating the lessons and best practices that emerge from the evaluations. The Community Manager was

⁵³ The description of roles is a summary of Chapter 8 Programme Organization and Management in the revised project document (pp. 18-20).

responsible for maintaining critical networking functions and for assisting the Facility Coordinator, the partners, and the incubators in developing the UniBRAIN communications strategy and for maintaining communications between stakeholders and ensuring awareness of UniBRAIN activities. The community manager was responsible for developing and internalising network structures and information and public awareness support functions.

Finally, the respective AIIC Boards were established in accordance with their legal setting. The Boards was to be the competent authority of the AIICs and the formal interface between the consortia members. UniBRAIN reserved the right to appoint a Board member and/or participate in board meetings as an observer. The respective incubators should develop Terms of References for their competent authorities and senior management. Moreover, the AIIC Board should approve the business models and business plan as well as procedures and manuals of the AIIC. They should also appoint an incubator CEO, approve plans and budgets and subsequent reports, and appoint the external auditor and subsequent discuss, adopt, and approve the audit reports.

3.6 UniBRAIN's Programme Cycle

Table 3.6 shows a timeline of the development of the UniBRAIN programme. The programme was initiated in 2010. The inception and start-up phases were planned to run from January 2010 to December 2011. The first two years were used for selection of the six successful AIICs from an initial 51 application. After a shortlisting of 12 applications, the six were finally selected. This was followed by a period of coaching and training by the UniBRAIN facility and programme partners with the aim of developing the final business plans that entered the revised project document submitted to Danida by October 2011.

The programme was planned to initiate implementation in the beginning of 2012. But the six AIICs had to comply with a number of requirements in order to receive the first part of the funding or initiating implementation. The AIICs were to be established as independent legal entities, BoDs had to be established, basic organizational systems should be in place, core routines developed and approved by the BoD, etc. The AIIC partners engaged in this process during 2011 and 2012, and FARA conducted a due diligence process to assure alignment with internal programme regulations and procedures and donor requirements. This process was finalized towards the end of 2012 and all the AIICs were now moving into the operational phase and received funding for the implementation phase.

The AIICs spend most of 2013 on organizing themselves, for example, employing professional incubator manager/CEO responsible for the daily management of the incubator and organizing physical premises. Towards the end of 2013 the AIICs were becoming operational and the AIICs were officially inaugurated during 2014 and 2015. Most of the AIICs have been fully operational during second half of 2014, i.e., only two years compared to the originally envisioned four year implementation phase. The donor support ended in March 2016.

UniBRAIN's Objective #3 states that the programme's innovative outputs, experiences and practices should be shared and scaled up. The obligation to achieve a sustainable organizational setup that could continue to operate with the aim of expanding the agribusiness incubator concept further, had been a key element from the programme initiation. The project document envisions the establishment of a UniBRAIN facility independent of FARA and managed on a commercial basis. AAIN was founded in 2015 with the aim of continuing the UniBRAIN operations into the post-funding phase.

Table 3.6. Timeline of programme development.

Year	Activity
2009	Programme idea developed and strategized as part of the Danish African Commission Initiative 1
2010	
January	Programme start-up
January	Public call launched for applications for establishing AIICs
June-July	Appraisal of the UniBRAIN programme 51 application received by UniBRAIN
2011	
March	Screening of 51 application and shortlisting of 12 AIICs by the UniBRAIN Steering Committee
May	12 AIICs submit business plans
May	Consultancy to determine the roles and responsibilities of the UniBRAIN partner organizations
June	6 final AIICs selected
August	Consultancy to determine the financial management system of the UniBRAIN programme during the implementation phase
October	Revised project document submitted to Danida
2012	
February	ABP and WAARI cleared for access to USD 100,000 float funding to initiate implementation
August	1 st UniBRAIN Incubator and Partnership Meeting, Nairobi
September	Due diligence of AIICs by independent financial consultant
December	External programme review
2013	
January	2 nd UniBRAIN Incubator and Partnership Meeting, Nairobi
April	Review of UniBRAIN Implementation phase (by Danida)
June	Replacement of UniBRAIN Facility Coordinator
October	3 rd UniBRAIN Incubator and Partnership Meeting, Accra
November	Revised and shortened business plans for AIICs published
2014	
January	Inauguration WAARI
February	Inauguration SVCDC
February	4 th UniBRAIN Incubator and Partnership Meeting, Lusaka, Zambia
March	Launch of African Agribusiness Incubation Network (AAIN) at Global Forum for Innovators in Agriculture in Abu Dhabi.
May	Inauguration CURAD
July	Inauguration AgBIT
July	5 th UniBRAIN Incubator and Partnership Meeting, Accra
September	Review of UniBRAIN Implementation phase (by Danida)
2015	
February	6 th UniBRAIN Incubator and Partnership Meeting, Accra
March	Submission of AIIC Business Sustainability Plans
March	Inauguration CCLEAR
April	External programme review (Danida)
July	Inauguration ABP
September	UniBRAIN partners visit Finnish universities and incubators
September	African Agribusiness Incubation Conference (AAIC) held in Nairobi, Kenya from 28-30 September 2015
September	African Incubator Network (AAIN) established during AAIC

Year	Activity
2015	
October	7 th UniBRAIN Incubator and Partnership Meeting, Nairobi
2016	
March	8 th UniBRAIN Incubator and Partnership Meeting, Accra
March	Closure of programme funding from Danida

At this point two major lessons learned from the implementation of the UniBRAIN programme can be identified. First, the four-year programme period was over-optimistic. A programme with this type of institutional complexity and intellectual novelty needs sufficient time for partners learn and understand the involved concepts as well as time enough to establish the relationships necessary to ensure constructive collaboration. Second, partnership formation can be a very complex endeavour. Establishing a well-performing partnership between actors grounded in different sectors and institutional perspectives is a demanding and time consuming task. Several AIICs suggest that future programmes use a more flexibly phased model that separates the inception phase from the implementation phase thereby allowing implementation to be initiated when the institutional and organizational arrangements are in place rather than have to rush into premature implementation. Next, we shortly describe the organizational structure and governance structure of UniBRAIN as a backdrop for the partnership discussion.

3.7 Programme Management

3.7.1 Financial Management

The UniBRAIN programme was managed in accordance with FARA's existing operational procedures and manuals. A programme manual describing roles and responsibilities and providing templates for work plans, budgets and reports was issued to support the AIICs in their management tasks. Each AIIC and programme partners was required to document the adequacy of their respective administrative procedures.

The AIIC were established as autonomous legal entities and as such entered into MoUs or contracts with founding partners, UniBRAIN partners, incubatees etc. The relation between FARA and the AIICs was regulated by a sub-grant agreement.

FARA obtained funding from the donor on a semi-annual basis based on compliance with consolidated work plans and budgets. The funding for the AIICs was against annual work plans and budgets broken down as quarters and approved by the UniBRAIN SC. Release of funds was conditional on a list of 'Incubator governance and financial safeguards' largely corresponding with the list of due diligence requirements shown in Appendix 6. When these conditions were complied with, the AIIC could receive an initial funding of USD 100,000. Subsequently, 2-4 disbursements were planned per year depending on the AIICs financial management standards.

Procurements were specified in an annual procurement plan and had to be undertaken in accordance with the standard procurement procedures of FARA. In case of emerging needs, some flexibility during the year was allowed after due consultation with the Facility Coordinator, for example, to benefit from market condition. The project document states that a maximum of 25% of the budget can be used on fixed asset investments.

3.7.2 Planning and Reporting Cycle

The AIIC management elaborated annual work plans and budgets which had to be approved by the AIIC BoD before being submitted to the UniBRAIN Facility for consolidation and final approval by the UniBRAIN Steering Committee meeting. Once the annual work plans and budgets were approved funds could be released for six month at a time. Subsequent replenishment of funds was conditioned on a funding request which required the submission of a technical report on the expenditures of the previous period.

The above planning and disbursement procedures have been a challenge to the AIICs. The release of funding was time consuming and interviewees mention that in several cases project staff had to wait for salary for months. Delay in funding release is considered a consistent problem throughout the programme implementation period. Moreover, AIIC staff asked for more frequent communication about decisions taken at FARA level regarding submitted budgets. It was also mentioned that FARA changed the requirements for requesting, realizing and accounting for funds during the implementation phase (partnership meeting February 2015).

Overall, it seems to have been a challenge to secure a timely flow of funding for the AIICs. This, at least partly, reflects FARA's legitimate focus on control in relation to their administration of donor funding. The need for a more *"agile and responsive arrangement"* conduction for a business environment was already identified in the revised UniBRAIN programme document, but it seems that the call in the same document for *"a change from the traditional project oriented management style to one in which more authority is devolved"* was not successfully responded to. This highlights one of the major dilemmas identified in relation to the implementation of a business-oriented project through a donor funded mechanism. AIIC CEOs and lessons learned survey respondents argued that bi-annual fund release is preferable to quarterly to minimize administrative friction and that budget changes⁵⁴ mid-way through project implementation hampers planning and implementation.

3.7.3 Monitoring & Evaluation

As discussed in Chapter 2, monitoring and evaluation (M&E) constitutes an important dimension of incubator management. An efficient monitoring system is fundamental to have in place to be able to show to potential customers and ecosystem partners that the incubator can create value and deliver on its mission.

According to UNDP⁵⁵, an *evaluation* is a systematic and objective examination concerning the relevance, effectiveness, efficiency and impact of activities in the light of specified objectives. *Monitoring* is a continuous assessment that aims at providing all stakeholders with timely and detailed information on the progress or delay ongoing activities.

The UniBRAIN programme had an ambitious M&E strategy based on a comprehensive performance monitoring plan. The rationale of the M&E system was to support a double focus on

⁵⁴ Budget changes occurred due to fluctuations in the exchange rate between Danish Kroner and US Dollars.

⁵⁵ The Handbook on Monitoring and Evaluating for Results. UNDP, New York. Available at: <http://web.undp.org/evaluation/documents/handbook/me-handbook.pdf>.

both accountability and learning. The M&E system was designed to capture, analyse and document both process and product outcomes, including capturing of expected and unexpected institutional change. All M&E tools, reports and outputs were to be web-based and easy accessible at the UniBRAIN portal.

The performance monitoring plan addressed the following questions:

- How is implementation progressing? (based on activity milestones in work plans)
- Are the initiative's outputs being delivered? (based on output performance indicators)
- Is the initiative's purpose likely to be achieved? (based on purpose performance indicators)

The indicators for the three output areas addressed in the UniBRAIN programme are shown in Box 7.5. The specific tools involved in achieving the M&E objectives included:

- Continuous monitoring of results and impact through the MICS
- Annual external programme-wide reviews
- Due diligence process prior to implementation phase
- Discussions and identification of lessons learned during partnership meetings
- Dedicated lessons learned studies

The purpose of the MICS was to “*create a knowledge networking and collaboration platform for all stakeholders to interact and share information, i.e., UniBRAIN Facility team, partner institutions, AIICs, mentors and incubatees.*” The ambition was to develop a customised user-friendly web-based application that could serve users in the widely spread UniBRAIN community. The purpose of the MICS was to provide a tool for a) supporting project decision phases (i.e., design, approval, review), b) recording and communicating all special events during the project, and c) recording what needs to be documented, including milestones, indicators, achievements, lessons learned, etc. The MICS was planned to have the following tools:

- Logical framework
- Planning tool
- Monitoring and reporting tool
- Documentation tool
- Communication tool
- Project member database
- Main portal

Using the MICS the AIICs were expected to be equipped with a fully automated reporting system to monitor their incubatees in real time. This would provide incubator managers with a means of optimising client management and streamlining of management of coaching, meetings and trainings events.

In practice the MICS did not live up to the expectations. The chosen software product remained unfinished throughout the entire project period. Interviewees argued that it was too unstable and the system was never properly implemented. The system seems to have been technically too ambitious and misaligned with user group needs and technical capabilities.

Partnership Meetings were organized bi-annually and were an important venue for sharing of experiences and good practices across the six AIICs and between UniBRAIN partners and the AIICs.

In 2012, a due diligence process was initiated in order to align the administrative practices of the AIICs with those of the UniBRAIN Facility. The disbursement of the funding for initiating the implementation phase was made contingent on the compliance with a number of requirements (see Appendix 6). The due diligence process was important to align mutual expectations between the UniBRAIN Facility and the AIIC partnerships regarding the programme objectives, strategy and implementation.

Finally, external reviews were commissioned by Danida in 2011, 2013, 2014 and 2015. Both reviews provide extensive recommendations at both AIIC and UniBRAIN programme level. The 2014 review noticed that the UniBRAIN M&E system was relatively specific at output level in terms of aggregated numbers but the system entailed no independent investigation of incubatee satisfaction, comparison of approaches or similar during the implementation. Moreover, little explicit reflection on the lack of success on the business model level is identified by the UniBRAIN M&E system.

3.8 The UniBRAIN Programme-Level Network and Partnership

In Section 3.2 we provided a brief introduction to the *partnership* concept. In this section we introduce the seven UniBRAIN programme-level partners and their individual roles in the partnerships and document how UniBRAIN networking and partnership model has impacted the AIICs' performance.

3.8.1 The UniBRAIN Core Partners and Their Roles

The UniBRAIN programme included seven core partners at the programme level: FARA (the lead partner), ANAFE, PanAAC, ABI-ICRISAT, ASARECA, CORAF/WECARD and SADC/FANR.

FARA is the apex organization for agricultural research for development in Africa and a lead partner with the AUC/NEPAD in implementing the Comprehensive African Agriculture Development Programme (CAADP). The mission of FARA is to create broad-based improvements in agricultural productivity, competitiveness and markets by supporting Africa's sub-regional organizations (i.e., ASARECA, CORAF/WECARD and SADC/FANR) in strengthening the capacity of the national agricultural research system (NARS) for agricultural innovation. FARA proposed the UniBRAIN programme to the Danish African Commission and was appointed to head the implementation. FARA's role in the programme included to⁵⁶:

- Coordinate the UniBRAIN initiative and Facility, mobilise additional resources and facilitate the evolution of the Facility into an autonomous FARA firm or trust.
- Ensure the input and quality of the routine data and information required for UniBRAIN management, statutory reporting and M&E will be collected, analysed and reported

⁵⁶ UniBRAIN Programme Document (2011).

- Provide assurance that the incubators' accounts systems and the quality of the data comply with the grant conditions and that the Incubator Management is properly and adequately informed of any matters of concern related to the viability of the incubator business and the terms and conditions of the UniBRAIN grant.
- Be capacity strengthening resource in accounting and financial management for the incubators
- Draw lessons from the successes and failures from different sub-regions in engaging agricultural research in agribusiness
- Keep effective communications and information flowing among all UniBRAIN stakeholders

ANAFE is a pan-African network of 131 African universities and colleges with a track record of success in catalysing and guiding curricula and pedagogical reform. ANAFE's mission is to enhance the quality, relevance and application of tertiary agriculture and natural resource education institutions in Africa. ANAFE's role in the programme included to:

- Provide performance and quality assurance in respect of the improvement of agribusiness education
- Work with the incubators and associated agribusiness faculty staff in planning and designing improvements to agribusiness courses
- Help ensure that the universities associated with UniBRAIN take optimal advantage of the incubators to improve the agribusiness education that they provide
- Be a knowledge source on the lessons learned by other initiatives for improving agribusiness education
- Raise UniBRAIN impact by disseminating improved agribusiness education products amongst its wider membership and by helping internalising them in non-UniBRAIN universities and colleges

ABI-ICRISAT is a reputed international institution that has pioneered the uptake of research products through agribusiness incubation with day-to-day hands-on experience in incubator management and in establishing agribusiness incubators. The Agri-Business Incubation (ABI) programme is an initiative of ICRISAT under the Agribusiness and Innovation Platform (AIP) in a partnership with the Department of Science and Technology (DST), Government of India, to promote public-private partnerships. The mission of ABI-ICRISAT is to improve the well-being of the poor through the creation of competitive agri-business enterprises by technology development and commercialization⁵⁷. The role of ABI-ICRISAT in the programme was to:

- Provide assurance that the incubators' business models and business plans are properly formulated and are carried out
- Be the primary resource for strengthening the capacities of incubator management
- Provide advice in fine tuning the business plans and keeping them current in the face of changing circumstances

PanAAC is a private sector driven platform that aims to bring together agribusiness and agro industry value chains and support services by enabling access to information, knowledge, strategic partnerships and financial remediation. PanAAC is a relatively new institution

⁵⁷ <http://www.aipicrisat.org/agri-business-incubation-abi-program/about/>.

established in 2007. PanAAC has the mission to mobilize strategic networks involved in African agribusiness and agro-industry value chain to increase growth, foster productivity, promote intra-regional trade and attract direct investment in the food system.⁵⁸ The role of PanAAC included to:

- Provide performance and quality assurance in respect of the services provided to agribusinesses at all levels
- Identify and motivate business mentors for start-ups and SMEs
- Provide information and contacts for match-making, soft landing advice and compliance with business regulations and product certifications
- Provide advice on sources of knowledge of national business, employment and environmental laws and regulations

In addition, three SROs are included as partners: CCARDESA, ASARECAC and CORAF. The SROs have unique insight into how national agricultural research systems and their constituent institutes function and knowledge of their research products as well as their human and infrastructural resources. CCARDESA had been recently institutionalized and therefore constituted a relatively new organization at the beginning of 2012. The role of the SROs was to:

- Provide performance and quality assurance of engagement of NARI's, especially those that are not members of the AIICs
- Help identify research products ready for commercialisation and guard the interest of the inventors (institutional and personal)
- Assist in locating the best institute for the conduct of particular research and in assuring the quality of the research product
- Create links between the incubators and the African Forum for Agricultural Advisory Services (AFAAS) and farmers' organizations and raise their awareness of the successes and opportunities provided by the incubators

According to the UniBRAIN Programme Document the core partnership team was jointly responsible for:

- Ensuring compliance of their own schedules and performance criteria
- Incorporating management information into the UniBRAIN Management Information and Coordination System (MICS) and regularly brief the UniBRAIN Partners' Committee on the progress in their areas of responsibilities
- Immediately informing the Facility Coordinator in the case of more urgent developments
- Providing information on compliance with national laws and regulations and Africa Commission criteria such as ensuring that there are no obstacles to women's participation and or negative environmental impact

In addition to the seven core partners, the programme document stated that UniBRAIN and the AIICs will need assistance from additional partners, for example, in relation to policy issues such as intellectual property policy, personnel and commercial contracts, commercial confidentiality, company registration, licensing and product certification, etc. Training is a different area where other experienced partners, for example, InfoDev could be engaged as service providers.

⁵⁸ www.panaac-africa.org.

3.8.2 The Partners' Contribution

The UniBRAIN partners have provided a number of inputs to the AIICs. In this section we review the different activities and other inputs that each partner has provided.

FARA has provided UniBRAIN with access to in-house expertise, for example, on gender issues and in monitoring and evaluation that could help build capacity and design a suitable customized M&E system for the AIICs. Moreover, being the key pan-African agricultural research organization, FARA bestowed UniBRAIN with institutional legitimacy and credibility as well as access to a range of international agencies and policy makers.

ABI-ICRISAT has played a very important role throughout the entire inception and the implementation phases. ABI-ICRISAT's own experience with agribusiness incubation has been the single most important source of knowledge and practical experience with the incubation concept. ABI-ICRISAT has been very involved in day-to-day operations of both UniBRAIN and the six AIICs. The most important contributions from ABI-ICRISAT have included:

- Training and capacity-building in incubation and incubator management for stakeholders and incubation staff
- Sensitization of AIICs lead institution leaders on agribusiness incubation
- Mentorship and guidance to AIICs through direct visits and annual meetings
- Support in business model, business plan development
- Facilitating the recruitment of the key staff of the AIICs
- Technology transfer from India
- Provision template documents for incubator management SOPs
- Networking with international incubator organizations
- Conference organization
- Exposure of UniBRAIN and the AIICs through various publications (including Global Agri-Business Incubator (GABI) network e-Newsletter)
- Identification of funding opportunities and proposal development
- Joint project development with FARA
- Upscaling the UniBRAIN by initiating additional consortia in new countries

Most importantly, ABI-ICRISAT has supported the development of business models and business plans for the six AIICs. Members of the ABI-ICRISAT team have visited the AIICs twice a year during the inception and implementation phases and have mentored the incubator staff and management on incubation practices. Moreover, they have actively contributed to the formulation of the business plans, for example, by supporting the AIICs in conducting SWOT analyses and rapid market surveys for agrifood products, and in the writing of the documents.

ABI-ICRISAT has also provided generic manual templates: Handbook of Incubator Management: Policies and Procedure and Client Management Manual. These manuals were subsequently adjusted by the AIICs to their specific context and conditions. ABI-ICRISAT has been involved in the preparation of a number of publications, including technology catalogues and they have contributed with information on transferable technologies from India.

In November 2011 ABI-ICRISAT organized a visit for AIICs Board members and University leaders to ABI-ICRISAT in Hyderabad, India, for a one-week incubator management training course and visits to a number of Indian agribusiness incubators. This event is recognized by

several AIICs as being very instrumental in explaining and illustrating the incubator concept in practice to AIIC BoD members, but just as importantly to partnership universities top-managements. This helped create acceptance and support for the AIICs within the university systems where incubation was previously a largely unknown concept. ABI-ICRISAT has helped organize excursions to a South African incubator and ABI-ICRISAT has also been involved in organization of conferences, for example, the 1st African Agri-Business Incubation Conference and Expo held in September 2015.

ABI-ICRISAT has also contributed to UniBRAIN's upscaling ambition (Objective #3). ABI-ICRISAT has engaged in further diffusion of the agribusiness incubator idea through its role in implementing a grant from the Indian Ministry of Food Processing Industry to five selected recipient countries with the aim of establishing Food Processing Business Incubation Centres. Incubators are to be established in Uganda, Angola, Cameroun, Uganda and Kenya. During the spring of 2016, ABI-ICRISAT and UniBRAIN were instrumental in establishing a new incubator in Mali.

ANAFE has been responsible for the agribusiness curriculum development and diffusion process associated with UniBRAIN programme (Objective #2). The activities performed by ANAFE are outlined in detail in Chapter 8.

PanAAC

PanAAC was representing the private sector in the UniBRAIN partnership, although PanAAC is not a private enterprise, but a network. Some examples of PanAAC's contribution to the AIICs include:

- Needs assessment among the AIICs
- Creation of link between AIICs and local business network
- Organization of a training event on marketing
- Identification of in-country mentors for the incubators

The external review reports and partnership meetings indicate that PanAAC did not meet the expectations of UniBRAIN and the AIICs. During 2013, AIICs explicitly complained that PanAAC was not effectively engaging with them. The problem seems to have been lack of the necessary human resources to provide for themselves, or identify suitable external mentors to provide mentorship for the AIICs' incubatee. To alleviate this shortcoming, PanAAC subsequently partnered with Strategic Business Advisors (SBA), a private consultancy firm that should serve as the primary mentor and advisor. SBA would a) advise on customization of M&E for mentorship, b) provide own resources for mentorship or identify the best alternative expertise, c) promote sharing of experiences to add value, and d) create awareness of resources available to incubators. In addition, SBA could also develop training materials. The practice of hiring consultants to conduct incubatee mentorship is very expensive and questionable for several reasons. We will discuss this issue further in the Chapter 6.

SROs

SROs' have provided exposure through SRO websites⁵⁹, periodic newsletters, for example, in ASARECA's The Agri Forum, and narratives in SROs' annual reports⁶⁰. ASARECA identified and prioritized technologies, innovations and management practices that could be up-scaled through the UniBRAIN incubators. The result is the publication 'Opportunities for commercialisation and research under the banana, coffee and sorghum value chains in Kenya and Uganda'⁶¹. CORAF/WECARD published four agro-food brochures on cashew nuts, pre-cooked fonio, mango nectar and sebe nectar that showcase some of the available technologies for commercialization. Table 3.7 summarizes the main capacity development activities organized by the UniBRAIN partners during 2011 to 2016.

Table 3.7 Overview of capacity development activity organized by the UniBRAIN programme.

Year/month	Capacity building/training/awareness raising activities	Place	Organizer
2011			
March	Business Training Workshop	Nairobi, Kenya	ABI-ICRISAT
October	African Agribusiness Forum Conference	Johannesburg, South Africa	EMRC
November	Capacity Strengthening, one week course	Hyderabad, India	ABI-ICRISAT
October	Visit to Timbali Technology Incubator in South Africa	Nelspruit, South Africa	ABI-ICRISAT
2012			
February	2 nd Global Agribusiness Incubation Conference	New Delhi, India	NIABI
November	African Agribusiness Forum Conference	Dakar, Senegal	EMRC
2013			
January	MICS training	Nairobi, Kenya	UniBRAIN
March	Needs assessment among the AIICs	-	PanAAC
March	Incubator Management Training with InfoDev	Kampala, Uganda	ABI-ICRISAT, InfoDEV
July	Africa Agriculture Science Week	Accra, Ghana	FARA
October	African Agribusiness Forum Conference	Kigali, Rwanda	EMRC
October	Agribusiness Education Fair/ UniBRAIN's Agbiz Idol Camp	Nairobi, Kenya	ANAFE
August	Workshop on Technology Commercialization	Kampala, Uganda	ASARECA
August	Strategy Meeting and Training for AIIC BoD members	Kampala, Uganda	PanAAC
December	Enhancing Mentorship for Agribusiness Innovations – Incubator Managers-Mentors Consultative Workshop	Nairobi, Kenya	PanAAC

⁵⁹ See, e.g., <http://asareca.org/~asareca/news/asareca-supports-business-incubation-empowerment-jobs-income-and-growth>.

⁶⁰ <http://www.asareca.org/~asareca/sites/default/files/Annual%20Report%202014%20Web.pdf>. See page 21-25.

⁶¹ See: <http://www.asareca.org/~asareca/publication/universities-business-and-research-agricultural-innovation-unibrain-initiative>.

Year/month	Capacity building/training/awareness raising activities	Place	Organizer
2014	...		
January	Learning and exchange visit at CCLEAR	Accra, Ghana	UniBRAIN
February	Gender training	Lusaka, Zambia	FARA
March	Global Forum for Innovators in Agriculture	Abu Dhabi, UAE	GFIA
July	Learning and exchange visit at AGBIT	Lusaka, Zambia	UniBRAIN
August	Training on Intellectual Property	Kampala, Uganda	PanAAC
2015			
March	Global Forum for Innovators in Agriculture	Abu Dhabi, UAE	GFIA
March	Incubator Management Training at Timbali Technology Incubator	Nelspruit, South Africa	ABI-ICRISAT
March	African Agribusiness Forum Conference	Kinshasa, DRC	EMRC
March	Agri-Biz Idol Camp	Kampala, Uganda	AAIN, ABI-ICRISAT
June	IPR Management Training with Kenya Industrial Property Institute	Entebbe, Kampala	ASARECA
July	Training on Gender	Accra, Ghana	FARA
September	Matchmaking and Exchange Visit to Finland	Finland	UniBRAIN
September	1 st African Agri-Business Incubation Conference and Expo	Nairobi, Kenya	AAIN
November	Gender Training Workshop	Nairobi, Kenya	FARA
2016			
March	Global Forum for Innovators in Agriculture	Abu Dhabi, UAE	GFIA
April	CAADP Partnership Platform	Accra, Ghana	NEPAD

3.9 Knowledge Sharing and Capacity Development

An important role of the UniBRAIN Facility was to support knowledge sharing and capacity building and document the involved mechanisms in the following section. Considering the importance of organizational and individual learning for the successful establishment of future incubators we aim to a) illustrate the variety of means available for knowledge sharing and capacity development and b) discuss the pros and cons of different means based on an evaluation provide by AIIC managers. The evaluation is shown in Table 3.8.

Table 3.8 AIIC CEO' evaluation of knowledge sharing activities.

Mode of sharing knowledge/ practices	Avg. rank. ¹	Comments
Partnership meeting	5	<ul style="list-style-type: none"> • Key in learning and sharing best practices and challenges • Critical in sharing action plans and what works
Learning and exchange visit	5	<ul style="list-style-type: none"> • Learned a lot and envisioned progress at other AIICs • Is expensive, but participants are able to share knowledge and also see for themselves • Crucial learning experiences
Capacity development training	5	<ul style="list-style-type: none"> • Gives the foundation and enhance knowledge • This created awareness among staff
Visits to other incubators	5	<ul style="list-style-type: none"> • This created inspiration for staff and also leaning of the best practices from other incubators
One-on-one training (supervision)	5	<ul style="list-style-type: none"> • Helped to streamline processes and share ideas • Expensive way of passing knowledge but other mode of training like virtual can be pursued • Critical learning experiences with ABI-ICRISAT

Mode of sharing knowledge/ practices	Avg. rank. ¹	Comments
Publication: Agribusiness curriculum framework (ANAFE)	4.5	<ul style="list-style-type: none"> Guiding the new and old universities in a practical agribusiness curriculum. It was a crucial output
Knowledge sharing with other R&D organizations	4.5	<ul style="list-style-type: none"> This has been very important as we managed to get more sponsorship and support from other partners We continue to create wider publicity about incubation in the country
Informal communication with colleagues in the other AIICs	4.5	<ul style="list-style-type: none"> Critical sharing and learning experiences
Exhibitions	4.5	<ul style="list-style-type: none"> The national exhibitions have been very vital especially to incubatees as they have been a marketing tool for their products. AIIC has managed to create a wider publicity International exhibitions have been very expensive with little benefit to the incubator and incubatees Key to introduce new products for the market
Conferences	4.5	<ul style="list-style-type: none"> Few conferences available but when they come they are effective This has been used for networking and learning among the AIIC Partnerships and new business is critical A bit expensive to attend though you are able to meet new innovations, technologies and markets
UniBRAIN Facility staff	4	<ul style="list-style-type: none"> Sufficient information was provided
Guest speaker	4	<ul style="list-style-type: none"> Not utilized enough Good learning experiences The experienced speaker is able to share knowledge and also motivate incubatees
Publication: Technology (ABI-ICRISAT)	3.5	<ul style="list-style-type: none"> Good to have but came through late The written material is available for use by participants
University of Copenhagen involvement	3.5	<ul style="list-style-type: none"> Not very active, but crucial in the AIIC establishment phase Contributes to better understanding of incubation and also developed the selection tools for incubatees
B2B sessions	2	<ul style="list-style-type: none"> Highly effective and allows live interaction and business building More important for incubatees than for incubators
MICS	1.5	<ul style="list-style-type: none"> Hardly worked Makes it easy to share information with others, but should be customised to incubator needs
Publication: Opportunities for commercialization (ASARECA)	1.5	<ul style="list-style-type: none"> Not very useful. Working on way to make ... more useful

¹ Likert scale from 'not important' (1) to 'very important' (5).

Partnership Meetings

The bi-annual partnership meeting was a mechanism developed to allow the AIICs and UniBRAIN partners to regularly interact despite the geographical dispersion of the participants across eight countries in Africa and Asia. Eight partnership meetings were held after 2012 when the six AIICs were established. AIIC CEOs evaluate that these partnership meetings were critical in sharing and discussing plans and policies. The meetings also provided UniBRAIN Facility with a venue for introducing and aligning, amongst others the M&E methodology, and the accounting, planning and reporting practices. Excursions to the local AIIC was also arranged during the partnership meetings providing opportunities to see operations in practice.

Learning and Exchange Visit

The incubators have to a varied degree been able to learn from each other and share experiences. The AIIC CEOs express that the opportunity to visit other AIICs and both experience and discuss different approaches has been very valuable. Two collective learning visits were organized at CCLEAR and AgBIT during 2014.

A particular good exchange has happened between CCLEAR and AgBIT who both had trainees from the international NGO Engineers without Borders (EWB) attached to their management units. This facilitated an ongoing exchange of experience, for example, on the organization of the incubatee selection process.

Capacity Development Training

A number of training events has been organized by the UniBRAIN partners and other external organizations, such as, for example, InfoDev and Kenya Industrial Property Institute, during the inception and implementation phases. These included training in M&E, incubator management, marketing, the role of the BoD, gender and IPR management. These training events are considered an important source of general information and capacity development, especially in the early stage of the AIIC establishment. On the other hand, some interviewees emphasize that it is important that the training conducted is based on actual needs assessment and not just constitute generic courses.

Visits to other Incubators

A number of excursions to other incubators have been organized within the UniBRAIN framework. In 2011, ABI-ICRISAT organized and funded a training and incubator visit trip to India for key stakeholders from the AIICs. Several interviewees highlight that the participation in this trip by high-level decision makers from their universities was very instrumental in legitimizing the UniBRAIN initiative and building the necessary managerial support needed to ensure the universities engagement in the establishment of the AIICs as jointly-owned companies.

In 2011 and 2015, UniBRAIN arranged excursions and leadership training at the Timbali Technology Incubator in South Africa. These visits are also identified by AIIC partners and incubator staff as important opportunities to see the practice of an established incubator model. The Timbali franchise model has inspired several of the AIICs to aim for similar concepts.

During UniBRAIN partnership meetings the participants have also had the opportunity to visit the local AIIC. This is also mentioned as an important inspirational source.

The experience from organizing excursions show that this is an important mechanism for knowledge sharing, not at least in situations where incubation is a novel concept to the founding organizations. Exposing high-level decision makers to established incubators is an important way of visualizing the planned activity and gaining buy-in from top-management.

One-on-One Training

The one-on-one has primarily been carried out by ABI-ICRISAT who visited the AIICs regularly and supervised the elaboration of business models, business plans, sustainability plans and management systems and practices. This type of support is highly valued by AIIC CEOs. Not only do ABI-ICRISAT staff bring in their experience from other incubators in India and Africa,

but as a partners in the UniBRAIN programme they also provide a means of sharing local knowledge between the UniBRAIN AIICs.

Publications

UniBRAIN and its partner organizations have published a number of publications. The publications can be grouped into three categories: Technology and research promotion, education and incubation promotion and incubator management guidelines.

Technology and research promotion publications have aimed to identify opportunities for commercialization and further research within the relevant agribusiness sectors addressed by the AIICs. Key publications include:

- A series of booklets introducing agribusiness technologies and associated business models, published by CORAF/WECARD and IER.
- “Opportunities for commercialization and research under the banana, coffee, and sorghum value chains in Kenya and Uganda” (2014)⁶², published by ASARECA.
- “Technology for African agri-business development” (2014).⁶³, published by ABI-ICRISAT.

Education-oriented publications have been published by ANAFE and have aimed at mapping educational needs, propose new curriculum and provide practical guidelines. Key publications include:

- “Agribusiness curriculum framework: Bachelors, Masters and PhD” (2014), published by ANAFE⁶⁴.
- “A tracer study of graduates from the universities involved in the UniBRAIN consortia in Africa - Linking training of agriculture to agribusiness development” (2013), published by ANAFE.
- “A guide to agribusiness internship and attachment in sub-Saharan Africa”, published by ANAFE.
- “Agribusiness curriculum framework: Certificate and diploma”, published by ANAFE.⁶⁵

Finally, a large number of publications have been produced that communicate the experiences and outcomes of the UniBRAIN programme. These publications include flyers, annual reports and management oriented publications:

⁶² <http://www.asareca.org/~asareca/publication/universities-business-and-research-agricultural-innovation-unibrain-initiative>

⁶³ Available at: <http://oar.icrisat.org/9064/>

⁶⁴ http://www.coraf.org/documents/annonces-offres/2014-11/agribusiness_curriculum_for_bachelors_mastersand_phd.pdf

⁶⁵ http://coraf.org/documents/annonces-offres/2014-11/agribusiness_curriculumforcertificate_and_diploma.pdf.

- “UniBRAIN annual report 2012”, published by FARA⁶⁶
- “Realising the potential of Africa’s Youth: Linking university education, research and business in sustainable agriculture”, flyer published by FARA⁶⁷.
- “Re-engineering Africa’s future through agribusiness incubation for job & wealth creation”, published by FARA⁶⁸
- “A toolkit for gender mainstreaming in agribusiness incubation (2015)”, published by FARA⁶⁹

UniBRAIN has developed a significant amount of promotion and information material that seems to be widely available at the Internet, although not necessarily at the FARA site. Some information, such as annual reports other than the one for 2012 is not accessible. Unfortunately, the FARA homepage does not provide an easy access point to the extensive information elaborated by the programme. Neither do the AAIN homepage⁷⁰ provide access to this material. The ANAFE and ABI-ICRISAT publications are available at their respective homepage.

Knowledge Sharing with other R&D Organizations

Knowledge sharing and the ability of tapping into the experience of other R&D institutions was an issue raised by ASARECA during a partnership meeting in 2013. It was argued that this was a weak point that needed to be developed in the future. It is not clear if this challenge was subsequently strategically addressed by the UniBRAIN programme. This challenge is related to the nature and culture of the local entrepreneurial ecosystem, but also the AIICs’ ability to tap into the more global knowledge networks. The tripartite nature of the AIIC with the involvement of research organizations and universities may both provide opportunities and barriers. The institutional network, for example, between NARO sub-organizations may be conducive of access, whereas the close linkages to specific organizations may be a barrier in more competitive contexts. Oftentimes, it seems that personal relations play a significant role in which contacts are activated by the AIICs and that formal institutional arrangements play a limited role in practice. On the other hand, it is of significant importance to establish formal connections, for example, through the signing of an MoU before any type of collaboration can take place.

Informal Communication with Colleagues in the other AIICs

The AIIC CEOs have frequently had opportunities to interact and share their experiences. It is recognized as very important and constructive to be able to learn from others who experience the same kind of challenges.

⁶⁶ http://faraafrica.org/wp-content/uploads/2014/07/UniBRAIN-AR-2012_Ver05.pdf

⁶⁷ http://www.ddrn.dk/filer/forum/File/About_UniBRAIN.pdf.

⁶⁸ http://www.finnpartnership.fi/_tapahtuma_/1205/FARA%20-AAIN%20-UniBRAIN%20Story%20for%20Job%20and%20wealth%20creation%20in%20Africa%202012-2016.pdf

⁶⁹ http://faraafrica.org/wp-content/uploads/2015/10/A_Toolkit_for_Gender_Mainstreaming_in_Agribusiness_Incubation.pdf.

⁷⁰ <http://www.africaain.org/>.

Exhibitions

Exhibitions, such as agribusiness fairs are opportunities for displaying and selling the AIIC's and its incubatees' products, learn about competitors' products and get inspiration for new products. The exhibitions are also important venues for engaging with input providers and for meeting potential future collaborators.

Conferences

Conference participation has been an important activity for UniBRAIN, the AIICs and the incubatees. European Marketing and Research Centre⁷¹ (EMRC) organizes the annual AgriBusiness Forum conference. The forum attracts 400 to 500 agribusiness leaders and decision makers including private entities, development finance agencies, commercial banks, donors, industrialists, SMEs, researchers, government officials, international organizations, NGOs, and others from all over the world. The forum enables sharing of ideas and facilitates partnerships among agribusiness stakeholders. The UniBRAIN Facility has used the Forum to promote the UniBRAIN programme and the UniBRAIN model⁷². AIICs have participated with pitches or organized side events at the Forum and they express the importance of these events as opportunities to identify business opportunities and establish networks useful for providing the business development services. Finally, selected incubatees have been given the opportunity to participate and pitch their enterprises during the Forum. Incubatees also express that this kind of exposure has had a significant impact on their own personal development as well as provided them with useful contacts and business opportunities.

UniBRAIN was instrumental in organizing the 1st African Agribusiness Incubation Conference and Expo in Nairobi on 28th-30th September 2015. The theme of the conference was "Catalysing the sustainable transformation of Africa's agriculture through Agribusiness Incubation: Towards job and wealth creation, food security and poverty reduction."

UniBRAIN Facility staff

The support of the UniBRAIN Facility staff is recognized as having been very important. This support is discussed throughout this report.

Guest speaker

Guest speakers visiting the incubator have been used to a limited degree only; but this activity is generally recognized as a good motivational factor for incubatees and university students.

University of Copenhagen Consultancy

During 2012 and 2013 the University of Copenhagen was engaged in a consultancy to support the exchange of experiences and lessons learned among the AIICs. After an initial visit to all

⁷¹ For additional information see: <http://www.emrc.be/>.

⁷² See, for example, interviews with Unibrain Facility Coordinators and FARA's CEO are found at the EMRC homepage.

AIICs except of WAARI, a report⁷³ outlining a number of themes that had emerged during the discussion were published. The report was presented at a partnership meeting in January 2013 and discussions with AIIC partners during a subsequent round of visits to the AIICs. The issues identified in the report are summarized in Appendix 9.

During 2013 the consultancy focused on the exchange of experiences in relation to the incubatee recruitment processes. Flow charts of the activities involved in the incubatee recruitment processes were mapped (see Section 6.5.1 for an example). The process descriptions were used as a basis for comparison and discussion of pros and cons of different approaches.

The involvement of University of Copenhagen as an external and independent facilitator of the organizational learning process has been useful for the AIICs. Targeted discussions of the specific practices seemed to have been more helpful compared to the initial discussion themes prepared for internal discussions in the AIICs (see Appendix 9). The “Final report for the study to enhance lessons learned and knowledge exchange in the UniBRAIN agribusiness innovation incubator consortia”⁷⁴ concludes on the first two year consultancy. It is expected that the involvement of UCPH will lead to the publication of 6-8 scientific papers based on the UniBRAIN experience. In this way, Danida will contribute significantly to a very limited literature on incubation in Africa.

Business2Business Sessions

ANAFE organized two Business-to-Business (B2B) meetings in Nairobi with the participation of all incubators and various universities. Prior to the meeting incubatees had identified a number of topics they wanted to discuss with experienced business manager. During the meeting, the incubatees had the opportunity to present their business ideas to the business managers and receive feedback.

MICS

Given the geographical disperse locations of the UniBRAIN participant the acquired Management Information and Collaboration System (MICS) system was seen as a tool for assisting the programme management and AIICs in monitoring progress and sharing experiences and information. The MICS was an internet-based platform that was expected to allow the AIICs to conduct detailed M&E on their incubatees’ activities and that would provide the UniBRAIN facility manager with a tool to monitor the implementation of the programme at the individual incubatee and aggregated levels. All AIICs and partners have attended training in the use of the MICS.

The MICS was not an off-shelve product, but was being developed by the software firm during the implementation of the UniBRAIN programme. Unfortunately, the MICS did not meet the

⁷³ Hjortsø, C.N. and A. Totojani, 2013. Report to the UniBRAIN Agribusiness Innovation Incubator Consortia based on UCPH Roundtrip to Ghana, Kenya, Uganda and Zambia during October/November 2012. (https://curis.ku.dk/ws/files/186183912/Unibrain_report_1_Jan_2013.pdf).

⁷⁴ <http://um.dk/en/danida-en/partners/research/other//~/media/UM/English-site/Documents/Danida/Partners/Research-Org/Research-studies/UniBRAIN%20agribusiness%20innovation%20incubator%20consortia.pdf>.

initial expectations. From the perspective of the AIICs, the concept was good, but the technical solution never worked as expected and, in practice, the M&E has been conducted in other formats, primarily Excel sheets.

3.10 The Exit Strategy

An important rationale in the UniBRAIN programme was to establish the UniBRAIN model as a brand, reputed for creating value for African agribusinesses. A positive brand image based on successful products and results was seen as a prerequisite for sustaining and upscale the UniBRAIN approach. Project document for the implementation phase outlines an explicit exit strategy to achieve this objective:

- AIICs and UniBRAIN partners should use their own respective procedures and systems (i.e., parallel systems should not be established by the programme)
- During the programme period the focus should be on the six initial AIICs. The success of the UniBRAIN brand depends on the demonstrated successes of the six AIICs
- In addition, the six AIICs would constitute the critical mass needed for subsequent expansion of the UniBRAIN model
- Initially, the UniBRAIN Facility would function as a unit within the UniBRAIN Secretariat but through the programme period UniBRAIN should transform in an autonomous institutional entity, though fully owned by FARA

The project document outlines the key benchmarks to be met at the end of the UniBRAIN programme in order to facilitate the transformation into an autonomous unit. These benchmarks included that the UniBRAIN Facility obtained full discretion to make its own management decisions, developed its own post-programme business plan, established independent procedures and financial rules and regulations, established independent accounting and reporting capacity, and that the facility was located most suitable for its business and fundraising activities. The upscaling of UniBRAIN through AAIN is described in details in Chapter 10.

4 The Entrepreneurial Ecosystem

Key Lessons Learned – The Entrepreneurial Ecosystem

- Partnerships and collaboration are key issues in providing incubation services and for achieving sustainability
- Both new and established incubators should continuously scan their ecosystem system in order to identify potential sources of resources and synergies
- Linkage to other actors in the ecosystem can contribute with potentially important source of funding, collaboration and inspiration
- To gain legitimacy as a player in the ecosystem the incubators need to have a clear value proposition and focus on its expertise areas
- Incubators should strategically position themselves and their clients into the ecosystem
- Identify concrete opportunities for public and private support to entrepreneurs that incubators and incubatees can benefit from, for example, Engineers without Borders, World Challenge mentorship programme, the National Youth Fund, entrepreneurship awards, etc.
- New incubators can initiate linkages with their ecosystems based on pre-existing contacts at the individual staff level, but should increasingly rely on institutional contacts as the incubator becomes more established and gains legitimacy in the ecosystem
- Utilize the interest among public agencies in upscaling agribusiness incubation
- Engage with various parts of the universities and research institutions to build better links between incubators, scientists, researchers and the private sector
- The knowledge about incubation is very limited among other institutional players
- Incubator programmes should support their incubators with good practices on how to benefit from and contribute to the local entrepreneurial ecosystem

The 12 case studies and InfoDev's agribusiness incubator categorization presented in Chapter 2 illustrate that agribusiness incubation often has a broader value chain or sector development perspective. Compared to traditional business incubators, this is a distinguishing feature of agribusiness incubators and this perspective emphasizes the incubators' ability to navigate in the broader business environment. The concept of 'the entrepreneurial ecosystem' provides a framework for analysing the AIIC's environment. Related concepts of 'the (agricultural) innovation system' and 'business environment' are not explicitly introduced but referred to when useful.

The entrepreneurial ecosystem constitutes the context in which entrepreneurs strive to grow their company. The general review of lessons learned presented in Chapter 2 clearly shows the importance for agribusiness incubators to understand the business and entrepreneurial environment in which they operate. This knowledge enables new incubators to identify opportunities and threats in relation to their establishment, including identifying stakeholders who

can provide resources to support the incubator and its incubatees⁷⁵. Moreover, understanding the socio-economic and political context in which an incubator is operating is crucial for discovering opportunities and avoiding threats. The World Bank⁷⁶ identifies seven critical elements in the supportive infrastructure of the agribusiness sector:

- Technology infrastructure
- Human resource infrastructure
- Financial infrastructure
- Physical infrastructure
- Agricultural market infrastructure
- Manufacturing/processing infrastructure
- Quality of life infrastructure

In this chapter we address these dimensions through the use of a generic framework of the entrepreneurial system that can be used for analysing the local entrepreneurial ecosystem and business environment. We provide different examples of how UniBRAIN incubators have been able to tap into their environments to foster partnerships and raise resources. Moreover, a good understanding of the surrounding business environment can also be an important source of ideas for development of new business areas.

4.1 Background

The different stakeholders we have interviewed consistently confirm that one of the main problems with agribusiness development in Africa is that the involved actors are not efficiently connected – if at all connected. This is where the partnership idea behind UniBRAIN creates value by establishing a platform that enables and motivates value chain actors to interact and develop more efficient innovation systems, supply chains, value chains, and value networks.

Potentially, the UniBRAIN model provides a significant benefit in relation to identifying potential collaborative partners in the local environment because the incubator already from the outset links private business, universities and research organizations. Being able to directly access the networks in these three domains, i.e., avoiding usual cultural, institutional and practical barriers, gives the incubators a significant competitive advantage in an institutional environments where cross-sectorial interaction is often quite complicated. On the other hand, orchestrating value chain development through multi-stakeholder involvement is a challenge and requires, among other things, a good insight into the resources already available in the institutional and business environment.

⁷⁵ Business Incubation Toolkit - iDISC Incubation Good Practice: Module 1 - Start an Incubator (<http://www.infodev.org/business-incubation-toolkit>).

⁷⁶ Growing food, products, and businesses: applying business incubation to agribusiness SMEs. The World Bank, p.73 (https://www.infodev.org/infodev-files/resource/InfodevDocuments_1139.pdf).

4.2 Framework

A good insight into the local conditions is an important starting point for setting up a new incubator. The analysis can help identify business opportunities for start-ups as well as for the incubator itself. An entrepreneurial ecosystem refers to:

“The elements – individuals, organizations or institutions – outside the individual entrepreneur, that are conducive to, or inhibitive of, the choice of a person to become an entrepreneur, or the probabilities of his or her success following launch. Organizations and individuals representing these elements are referred to as entrepreneurship stakeholders. Stakeholders are any entity that has an interest, actually or potentially, in there being more entrepreneurship in the region.”⁷⁷

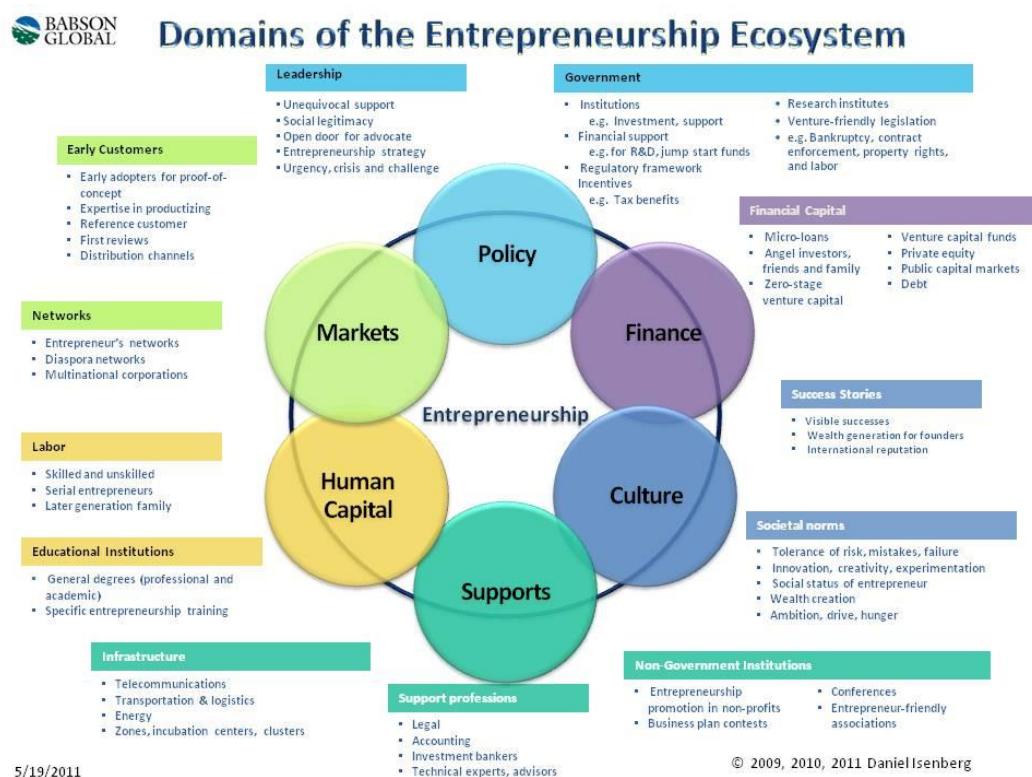


Figure 4.1 Isenberg's model of the entrepreneurship ecosystem (Source: Isenberg, 2011).

The overall objective of UniBRAIN to achieve agricultural transformation defines the core entrepreneurial ecosystem and most relevant stakeholder categories for each incubator, but an analysis of the actual ecosystem is an important tool to identify individuals, companies, and institutions with whom the incubator can collaborate to achieve its objectives. The main stakeholders in relation to agribusiness development may include government, universities,

⁷⁷ See: https://en.wikipedia.org/wiki/Entrepreneurship_ecosystem.

private sector, smallholders, farmers, farmer groups, cooperatives, investors, banks, entrepreneurs, NGOs, foundations, and international development partners.

4.3 Ecosystem System Functions

Different ways exist in which to conceptualize an entrepreneurial ecosystem. We have chosen the model shown in Figure 4.1 proposed by Daniel Isenberg⁷⁸. This model proposes six major interacting areas and twelve sub-categories of the ecosystem. The main areas, or sub-systems, include market, human capital, support, culture, finance and policy. In the following sections we present and discuss each of these six areas and highlight UniBRAIN lessons learned related to each area. We add one area to Isenberg's model: the knowledge adoption and diffusion sub-system.

In Table 4.1 we have listed a number of exemplary collaborations and partnerships that UniBRAIN AIICs have established. The list shows examples of how AIICs interact with different categories of actors in the entrepreneurial system. The list is far from complete, but gives a good impression of the type of collaborations established.

Table 4.1 Examples of collaborators and partners in the AIICs' entrepreneurial ecosystems (source: Own survey).

Type of partner	Interface	Benefits	AIIC
Private sector firm			
Starke Ayres	AgBIT has set up demonstration units at the incubator for high value commercial vegetable technologies marketed by Starke Ayers. AgBIT and Starke Ayres leverage resources by holding joint biennial field days for enhanced adoption of these new hybrid seed varieties by farmers	<ul style="list-style-type: none"> Increased access to improved seeds for farmers Increased sales and brand positioning for Starke Ayres Free training material and income from sale of vegetables grown at hub 	AgBIT
Haygrove	Haygrove has supplied AgBIT with greenhouse technology for improved vegetable and fruit production which AgBIT installed at the training hub and have used for training of selected farmers from farmer clusters. Trained farmers acquire hands on skills that they transfer to other farmers back in the farmer clusters	<ul style="list-style-type: none"> Improved farm productivity and income by farmers Increased sales and brand positioning by Haygrove Free training equipment for AgBIT 	AgBIT
Food Lover's market	AgBIT has secured a market for its farmers in the clusters	<ul style="list-style-type: none"> Farmers get access to predictable markets AgBIT gain income from facilitating the supply chain 	AgBIT
Bell Industries and Concern Universal	SVCDC together with Bell Industry and Concern Universal produce, distribute and train in the use of Purdue Improved Cowpea Storage (PICS) bags	<ul style="list-style-type: none"> Joint resource mobilization Bell industries provide pest resistant grain bags SVCDC provides training and distribution of bags Concern Universal provides access to the farmer communities 	SVCDC
East African Breweries	SVCDC has secured market for gandum sorghum used for making beer	<ul style="list-style-type: none"> Farmers get access to predictable market East Africa Breweries get access to steady supply of sorghum grain 	SVCDC

⁷⁸ Isenberg, D. (2011). The entrepreneurship ecosystem strategy as a new paradigm for economy policy: principles for cultivating entrepreneurship, Babson Entrepreneurship Ecosystem Project, Babson College, Babson Park: MA.

Type of partner	Interface	Benefits	AIIC
Nissin NODULES	SVCDC has been assessed by the company to be a preferred supplier of sorghum for Nissin's nodule production	<ul style="list-style-type: none"> SVCDC obtains a commission from facilitating the supply Market opportunity for the sorghum farmers connected to SVCDC 	SVCDC
Uganda Telecomm (M-Sente)	CURAD have teamed up with M-Sente as a sponsor of the annual Agribusiness Innovation Challenge – an entrepreneurship competition that feeds the CURAD incubation programme	<ul style="list-style-type: none"> CURAD gets a sponsored incubatee selection process M-Sente provides in kind business training as part of the CURAD incubation programme M-Sente gets publicity and access to innovative entrepreneurs with expert knowledge in the agricultural sector 	CURAD
National and International development partners			
Programme for Luapula Agricultural and Rural Development II (PLARD II)	To facilitate smallholder farmer cluster development interventions in Mansa district of Luapula province. This partnership has helped bring over 200 smallholder farmers in Mansa into the supply chain for fresh vegetables to the local Shoprite store	<ul style="list-style-type: none"> AgBIT gets funding to meet its mission through implementing the project PLARD II gets an experienced locally embedded organization to handle the implementation 	AgBIT
AgriProFocus	AgriProFocus is a network organization that supports service quality development, credit facilitation and business linkages. AgBIT provides business plan training in connection with financial fairs organized by AgriProFocus	<ul style="list-style-type: none"> AgBIT recruits SMEs through the partnership AgBIT incubatees get access to the 'Access to finance' conferences AgriProFocus gets access to the horticulture sector through AgBIT AgBIT obtains a service fee for the business planning training 	AgBIT
Danida Fellowship Centre	CURAD had partnered with Danida Fellowship Centre and NIRAS, a private consultancy firm, to offer a 3-week international agribusiness development course	<ul style="list-style-type: none"> CURAD obtains network and revenue from organizing the training course Danida obtains access to the Ugandan agribusiness sector 	CURAD
West African Agricultural Productivity Programme (WAAPP)	The CCLEAR/WAAPP collaboration project titled "creating competitive young entrepreneurs in grasscutter business" provides capacity building and skills development training in the Eastern, Central and Greater Accra regions where there is significant grasscutter production	<ul style="list-style-type: none"> WAAPP funds the development project CCLEAR provides technical training, business training, input and facilitates market access for farmers in the project Former CCLEAR incubatees provide inputs for farmers 	CCLEAR
Uganda Investment Authority (UIA)	The SME Division of UIA supports and facilitates the development of MSMEs who are majorly domestic entrepreneurs. The overall goal of the SME division is: Developing Sustainable Domestic Investment & SME's	<ul style="list-style-type: none"> CURAD incubatees obtain business training and acceleration at UIA incubation centre 	CURAD
NGOs			
Scopeinsight	SVCDC has partnered with <i>Scopeinsight</i> to conduct assessments of the level of professionalism of incubatees as part of due diligence and to train staff to conduct assessments at a small fee for the incubator	<ul style="list-style-type: none"> SVCDC obtains access to an assessment tools SVCDC professionalizes their incubatee assessment process <i>Scopeinsight</i> obtains access to a new market 	SVCDC
Global Alliance for Improved Nutrition (GAIN)	GAIN provides a platform to bring together local entrepreneurs and investors, foster innovation and provide investment that can help make nutritious foods affordable and accessible to low income consumers.	<ul style="list-style-type: none"> SVCDC obtains access to GAIN's accelerator programme for SME incubatees at SVCDC GAIN gets access to SMEs that has reached a mature state and are ready for acceleration 	SVCDC
Farm Africa	SVCDC partner with Farm Africa in implementing sorghum promotion programs among small scale farmers in Eastern Kenya	<ul style="list-style-type: none"> Joint resource mobilization SVCDC has access to improved sorghum varieties Farm Africa has local network and experience with adoption of technologies to local context Joint training of farmers reduce costs 	SVCDC

Type of partner	Interface	Benefits	AIIC
PUM (Netherlands)	Dutch manager development programme with volunteer senior experts that provide business advice and technical assistance to organizations in developing countries and emerging markets, taking away bottle necks and facilitating sustainable paths for growth	<ul style="list-style-type: none"> PUM provide organizational development support according to its mission CCLEAR obtains high-quality mentorship for its managers 	CCLEAR, CURAD
Engineers Without Borders (Canada)	Engineers Without Borders (EWB) is a community of thousands of students, professionals and fellows working to create systemic change in Canada and Sub-Saharan Africa.	<ul style="list-style-type: none"> EWB's Junior Fellows work at the AIICs gaining unique experience and valuable insight on development and systemic change AIICs get access to valuable administrative expertise and support 	CCLEAR, AgBIT
Banks/finance institutions/ microfinance			
Yunus Social Business (YSB) Uganda Accelerator Program	YSB applies business approaches to the social development sector. YSB promotes and empowers social businesses through provision of business development services, financing and related technical support	<ul style="list-style-type: none"> CURAD obtains access to YSB's accelerator programme for SME incubatees at SVCDC YSB facilitates access to start-up capital YSB gets access to SMEs that has reached a mature state and are ready for acceleration 	CURAD
Kenya Women Microfinance Bank (KWMB)	SVCDC has entered into an agreement with KWMB to facilitate farmers' access finance for farm inputs	<ul style="list-style-type: none"> SVCDC can facilitate access to funding as part of their incubation services KWMB gets access to supported customers, i.e., less risk 	SVCDC
Educational institutions			
Kenyatta , Nairobi, Moi, Strathmore universities	SVCDC together with ANAFE organised for a pitching session where best ideas were picked for support from various universities	<ul style="list-style-type: none"> SVCDC's incubatees are exposed to other support opportunities SVCDC gets exposure to potential agribusiness incubatees Networking with other incubators gives new knowledge and inspiration 	SVCDC
Purdue University	Purdue Improved Cowpea Storage (PICS) was a five-year project to improve cowpea storage in West and Central Africa. The goal of the PICS project was to have 50% of the cowpea production in West and Central Africa stored using our non-chemical, triple bagging hermetic method	<ul style="list-style-type: none"> SVCDC market on a commercial basis the PICS bags to farmers in the areas where they work Purdue University enhances the diffusion of their product 	SVCDC

4.3.1 Accessible Markets

Access to markets is fundamental to both the incubator itself and the incubatees it serves. We distinguish between the market for business support and the market for agribusiness product. The value mission and institutional nature of the UniBRAIN incubators provide them with a range of business support market opportunities. Entrepreneurs looking for incubation and business support are the core customer segment and people with ideas are abundant. UniBRAIN incubators are obliged to pay specific attention to university graduate student entrepreneurs who are often in a very early start-up stage focusing on product development, refining their business model and obtaining a basic business understanding. UniBRAIN incubators have relatively easy access to university students which is reflected in a large proportion of the enrolled incubatees being of this category. Another main customer segment is individual farmers and smallholder associations. All UniBRAIN AIICs' engage with farmers, often in the form of farmer associations, providing technical training, facilitation of input, incubation for value added activities, establishment of quality control procedures and produce aggregation systems. These market segments are relatively easily accessible but the willingness or ability of the end-user to pay for services may be very limited.

Established SMEs constitute another market segment for incubators. SMEs may also require introduction to new technologies, new product development services, or business growth acceleration. In many cases, the consultancy sector's ability to provide these services is rudimentary, thus providing a window of opportunity for UniBRAIN type consortiums. Similarly, larger corporations can provide a market opportunity. Established companies may request research in terms of product testing or product development. The nature of the UniBRAIN partnerships especially positions these as potential service providers for value chains coordination. The UniBRAIN incubators' business plans also foresee a market for 'soft landing' services provided to foreign companies that aim at establishing themselves in the local market. Servicing this more established market segment requires a high level of professionalism and specific expertise.

Partnering with corporate customers

CCLEAR provides technology diffusion and incubation services to farmers relocated by an oil company. The project is funded by the corporate firm as part of their CSR policy.

SVCDC plans to collaborate with Kenyan Breweries assuming a role as value chain organizer in order to aggregate sorghum from smallholder to enable them to supply at an industrial level.

Providing services for governmental and development agencies and NGO's constitute yet another important market opportunity. The combination of competencies united in the UniBRAIN consortia provides them with a unique technology and knowledge base for combining technology diffusion and adoption, business management capacity development and marked integration of smallholders. This holistic approach can be a significant competitive advantage when combined with the credibility gained from the close institutional linkage with major institutional players in the sector such as NAROs and public universities.

Experiences show that the revenue generation from service provision to individual incubatees and SMEs is difficult. Several interviewees associate this with the general notion that such services are expected to be provided without any cost to the beneficiaries, such as it is, in general, the case with NGOs. The non-profit status of the UniBRAIN incubators enhances this expectation. Contracting with large corporations is considered difficult and uncertain as it is a highly competitive and specialized market. Collaboration with governmental and NGO-based projects funded by development aid is largely recognized by the incubators as an important business opportunity. Most incubators are presently involved in such project or are in the process of developing projects together with other actors in the ecosystem. University and research organization spin-outs as well as corporate spin-offs are other potential clients that could be served by the UniBRAIN incubators.

From the above review of UniBRAIN experiences, it is clear that a diverse market for business support services exists. To decide which of the potential business opportunities to develop, an incubator needs a good understanding of their market, including competitors in the incubation and business development support sector.

A good understanding of the nature of the market for agribusiness products is of course also important. Several of the UniBRAIN AIICs market their own products as well as

Partnering for development projects

CCLEAR provides production facilities and incubates role model farmers in grasscutter production as part of the West African Agricultural Productivity Programme.

AgBIT have teamed up with Programme for Luapula Agricultural and Rural Development and provides production and business training and cluster development services to smallholders in the horticulture sector.

support the marketing of the incubatees' products. Incubators need to know the customers, their behaviour, and how to reach them. They need to have a good insight into market institutions for agriculture products, sector information, finance and storage systems, supportive tax, trade facilitation and market regulatory systems, and how culture influence risk taking and new agribusiness formation.

4.3.2 Human Capital

Human capital comprises the human aspects of the ecosystem. This includes the characteristics of the available workforce, entrepreneurial individuals, technical and managerial talent pool, available entrepreneurial company experience and available competencies that make it possible for start-ups to outsource non-core tasks.

Incubators rely on the human capital available in the surrounding environment, but in the UniBRAIN case the incubators also explicitly contribute to the establishment of human capital by supporting the development of a more competent and relevant workforce available to the agribusiness sector. To achieve this objective the UniBRAIN programme has supported the development of an updated curriculum for agribusiness educations at different levels as well as exposed university educators to real-live business contexts.

The inclusion of universities in the tripartite partnership model is recognizing the fact that the most important contribution to the ecosystem from universities is their students who get new ideas and increase the intellectual capacity of the community⁷⁹. The integration of an educational dimension in the UniBRAIN model acknowledges the role that incubators can play in influencing the human capital in their environments.

University staff constitutes an important human capital available to UniBRAIN AIICs. A significant number of university staffs were involved in the initial idea development and proposal writing stage of the six AIIC applications (2010-2011). During the inception phase the AIICs linked many of these university staff members to the incubator organization through the TACs. The TAC members' role is to advise the incubators on technical issues, but they also constitute a knowledge pool from which the incubator can draw. The TAC members were envisioned to have priority in conducting short-term consultancies provided to SMEs and other customers by the incubator. This type of interaction was foreseen to positively influence the formation of human capital in the university through a flow of practical and contextualized business-related insight into the teaching programmes. For different reasons this knowledge exchange mechanism has been challenging to implement. TAC members mention that consultancy opportunities have been limited, partly due to lack of demand and partly due to the fact that such consultancies could be conducted by the incubators own staff and thereby support its financial sustainability. The universities' exposure to business knowledge seems to have had the highest impact in the cases where university partners were non-agribusiness scholars.

⁷⁹ Mason C. and Brown R. (2013) Creating good public policy to support high growth firms, *Small Business Economics*, 40, 211-225.

In general, major universities are considered important catalysts for entrepreneurial activity. In the World Economic Forum's conceptualization of entrepreneurial ecosystems 'universities as catalysts' constitutes one of eight pillars⁸⁰. Worldwide, universities increasingly create opportunities for students to learn about or obtain practical experiences with entrepreneurship, for example, through 'Earn as You Learn' programmes⁸¹ such as the ones implemented at several UniBRAIN-related universities.

Partnering for business support

CURAD has partnered with several corporations to organize the annual Agribusiness Innovation Challenge – an entrepreneurship competition that feeds the CURAD incubation programme. The winners get access to the programme where corporate employees provide business training and mentorship.

The human resource infrastructure also includes other types of organizations that prepare, advance and renew skills to ensure that professional capacity available in the ecosystem can adapt to changing demand. This delivery system includes preparatory schools, vocational and technical schools, colleges and universities, specialized retraining centres and continuing education programs. For example, AgBIT collaborates with the Natural Resources Development College and Kasisi Agricultural Training Centre and other AIICs have similar types of collaborations.

An important human resource necessary for good incubation is experienced entrepreneurs and managers willing to serve as mentors. In general, finding such mentors seems to be challenging and incubators need to find strategies to nurture a mentor culture in the local business community. Strengthening peer-to-peer relations between novice incubatees and more experienced SMEs also enrolled in the programme may be a good starting point. This seems to have happened informally in some cases, but the AIICs could aim to cultivate this practice further.

The University-Industry Forum⁸² collaboration modality was developed by ANAFE as a concrete way of letting university students, researchers and managers meet with industry representatives, thereby tapping into the human capital of the local business ecosystem. For example, the forum can provide opportunities for match-making meetings on a quarterly basis, enabling students to present their thesis research and network with potential employers. A key component of the forum could be to convene business-to-business meetings where private sector partners offer professional advice to young university graduate entrepreneurs. Moreover, local businesses can communicate their problems to interested researches and negotiate potential collaborative projects. These types of fora are planned at Makerere University, JKUAT, and University of Ghana.

CURAD and AgBIT organized entrepreneurship competitions where they involve the local business community as sponsors and judges. The best entrepreneurs were subsequently enrolled

⁸⁰ Source: <https://www.weforum.org/reports/final-report-entrepreneurship-education-workstream-summer-2011/>.

⁸¹ For a explanation of the Earn as You Learn programme see Section 8.4.

⁸² Source: <http://anafe-africa.org/download/news/Agricultural-Education-News-Vol.-21.1.pdf>.

in the AIICs' incubation programmes where they were mentored and supervised by managers from the sponsoring companies.

The UniBRAIN model is special by directly integrating different sources of human capital, for example, university and research organization staff into the incubator organization. Other incubators, without direct institutional involvement of this kind, should focus on investigating the presence of such organizations, their lines of research, and the availability of experts for consultancies⁸³.

4.3.3 Support System

The AIICs are key players in the support system of their entrepreneurial ecosystem. The support system consists of the physical infrastructure, support professional and a range of governmental and non-governmental organizations that promote and support entrepreneurship and entrepreneurs. Knowing and interacting with other actors in the support system is highly important to incubators as these may provide important resources for both the AIICs and their clients.

Support professionals include banks, lawyers, accounting and technical experts and advisors. In some cases incubators may obtain *pro bono* support for their incubatees from professional service providers, either as part of the firms' CSR policy or because incubatees may become future customers. AgBIT and CURAD has managed to obtain such inputs by offering the service firms participation in the annual highly profiled entrepreneurship competition organized by the AIICs. Moreover, service providers such as lawyers, accountants and recruitment agencies can perform non-core activities that can be outsourced thereby helping to keep the AIICs' organizations lean and flexible.

A number of international NGOs offer business and managerial development support, either for free or on a cost recovery basis. CCLEAR and AgBIT engaged with Engineers without Borders (EWB), a Canadian NGO that provided the AIICs with young business educated professionals who worked in the organizations for 4-6 months. CCLEAR and CURAD have also collaborated with PUM, a Dutch NGO that facilitates 2-3 weeks visits from retired managers who analyse and advised the organization on strategic issues.

Another segment of the support sector important for the incubators to link up with is the accelerator programmes that service more advanced start-ups and SMEs. Many programmes provide such support and it is important for the AIICs to contribute to the eventual success of their incubatees by 'pushing' them on to the next adequate level of support available in the entrepreneurial ecosystem. In some cases this support may be provided by commercial banks, but projects like GAIN in Kenya and Youth Enterprise Support⁸⁴ (YES) in Ghana provide business acceleration that can bring the AIICs' incubatees to the next step. We discuss the issue of a local

⁸³ Mason C. and Brown R. (2014) Entrepreneurial Ecosystems and Growth oriented Entrepreneurship. OECD. (<http://www.oecd.org/cfe/leed/entrepreneurial-ecosystems.pdf>).

⁸⁴ See: <http://www.yes.gov.gh/>.

mentor network in Section 6.5.3.6. Here we just highlight that the mentor network that AIICs are able to establish is an important means of linkage for the support system.

Yet another important category of actors in the support system is the governmental and non-governmental organizations that support knowledge sharing and networking between start-ups and entrepreneurs, national as well as internationals, and other actors in the business ecosystem. AgriProFocus in Zambia⁸⁵ is an example. SVCDC collaborates with KenInvest⁸⁶, a public agency responsible for promoting investments in Kenya. KenInvest can help SVCDC incubatees to find larger firms to partner with, facilitate access to financial institutes and support for product development, and certification through Kenya Industrial Research and Development Institute.

The World Bank categories include manufacturing/processing infrastructure as a dimension in the agribusiness system. This category is highly relevant from a start-up perspective because access to affordable production facilities is essential for agroprocessing focused incubators. This may involve physical processing space as part of the incubator, or an extensive, private sector network of manufacturing and processing partners interested in supporting the AIIC's incubatees.

4.3.4 Cultural Support

The nature of the entrepreneurial culture has a significant impact on the ability to convince youth and women, the core target groups of UniBRAIN, to enter into entrepreneurial ventures. The availability of role models in the local context, who themselves have achieved what the entrepreneurs dream of, is an important driver for entrepreneurship. In general, the wish of university students is to enter a white collar career track. This is one of the cultural challenges to entrepreneurship that UniBRAIN is designed to address.

The general norms in the society, for example, the level of tolerance for risk, mistakes and failure and whether doing things in a new way or experimenting with known solutions is accepted or not, plays an important role for the likelihood that somebody will engage with self-employment through entrepreneurship.

These social norms may facilitate or hinder entrepreneurship and incubators must know how best to design their recruiting campaigns and service provision to address the implications of local norms and values. Being inter-organizational partnerships, the AIICs themselves unite partners from very different realms of society who are

Partnering for network and funding

AgBIT collaborates with the NGO AgriProFocus, a network organization that supports service quality development, credit facilitation and business linkages. AgBIT provides business plan training in connection with financial fairs organized by AgriProFocus and obtains networks, business opportunities and access to funding agencies for its incubatees in return.

⁸⁵ AgriProFocus is an online agri-network where organizations, professionals, resources and knowledge can meet, do business and learn from each other. Enterprises can access valuable local contacts through the AgriProFocus Directory and they can use the online Innovation Communities to highlight innovations, and to generate publicity for new products and/or services.

⁸⁶ Kenya Investment Authority (KenInvest) is a statutory body established in with the main objective of promoting investments in Kenya. It is responsible for facilitating the implementation of new investment projects, providing after care services for new and existing investments, as well as organizing investment promotion activities both locally and internationally.

embedded in different institutional rationales which influences the degree of willingness to take risks and engage in uncertain business-oriented activities.

Several of the AIICs actively work with changing the attitudes of the university students. Students typically do not see agriculture or agribusiness as an attractive employment opportunity but through Earn as You Learn programmes (see Chapter 8) the universities aim to expose the students to agribusiness entrepreneurship in a relatively safe environment to open their eyes to this opportunity. CURAD and AgBIT work explicitly with the promotion of agribusiness entrepreneurship through innovation challenges and business plan competitions that are highly profiled in the media.

4.3.5 Funding and Finance

Access to funding and finance is a theme of significant importance to the realization of the entrepreneurial potential in a given ecosystem. Funding sources for start-ups include friends and family, angel investors, private equity, venture capital, bank loans, soft loans, crowdfunding, peer-to-peer lending (e.g., SACCOs in Kenya), invoice-based finance and grants.

Facilitating access to funding is a key selling point for incubators, but at the same time a major challenge and inability to succeed in helping enrolled start-ups to obtain funding is a source of frustration in all UniBRAIN incubators. On the other hand, several informants confirm that funding is, in general, available for tested and scalable businesses, but professional investors are typically unlikely to consider investments below USD 500,000. Thus, it is highly challenging to obtain funding for the initial proof-of-concept stage, and therefore entrepreneurs have to rely on friend and family, crowdfunding, grants, start-up competitions, bootstrapping (see below) and organic growth through self-financing during the start-up and business acceleration stages.

The UniBRAIN incubators have played an important role by providing input materials and making available production technology, rather than cash provision. The non-profit status of the UniBRAIN type incubators may limit their ability to provide incubatees with operational capital, as is the case in Kenya, where the legal regulation prohibits this type of organizations to operate similar to a microfinance institution. In other cases, as for example in Uganda, where the incubators did not have this restriction, cash loans were provided within a revolving loan scheme, thus de facto establishing a microfinancing facility.

In several countries, such as Mali and Ghana, public soft loan or grant funding schemes for start-ups are available. For example, the YES programme in Ghana provides a soft loan up to USD 5,000 for entrepreneurs accepted in their programme. Similarly, NGO-managed projects may provide grants or loans for agri-entrepreneurs, as for example, GAIN in Kenya. Incubators should scout for and leverage on such opportunities within their entrepreneurial ecosystem.

Obtaining credit for agribusiness operations is difficult, among other things because financial institutes are not used to conduct credit evaluation on agriculture and agribusiness projects. Very few examples exist where UniBRAIN incubatees have obtained funding through banks or other financial institutions. The general, lessons learned is that commercial banks are not a realistic source of funding for the majority of the UniBRAIN incubatees.

Agribusiness incubators possess the necessary deep knowledge about particular value chains and are therefore capable of conducting effective due diligence analyses of new agribusiness ventures. In this way, they can play an important role by helping commercial banks and other investors to identify serious entrepreneurs with viable business ideas.

Such assessment processes should be based on transparent and recognized criteria. SVCDC collaborates with the NGO *Scopeinsight*⁸⁷, an international social enterprise based in The Netherlands, in order to test their assessment tools SCOPE Pro and SCOPE Basic. These tools serve the dual purpose of assessing

corporate farmer groups' management professionalism and business viability and at the same time identify training needs for enhancing their management efficiency. The tools have been developed in collaboration with International Finance Cooperation and private banks to accommodate standard financial assessment requirements. Application of such assessment tools can professionalize the incubators' own enrolment process and provide a means of supporting their incubatees' fundraising effort. Moreover, having been certified in the use of assessment tools, assessing farmer organizations can provide a revenue stream for the incubator.

Obtaining seed funding is worldwide a challenge to entrepreneurs. In the UniBRAIN context, most incubatees are unable to provide collateral. The high risk involved and limited capital restricts the UniBRAIN incubators' ability to provide such support. On this backdrop, the UniBRAIN incubators unanimously aim for a strategy that provides incubatees with access to shared production facilities during the start-up phase. This reduces the capital requirement and enables incubatees to establish a positive cash-flow enabling subsequent self-financing. In addition, incubatees should be supervised on other bootstrapping finance strategies⁸⁸, for example, other opportunities for joint use of resources, payment from customers prior to delivery and creative use of personnel.

4.3.6 Policy

Government policies often aim to support sector productivity and efficiency (for example, WAAPP in Ghana), promote innovation and entrepreneurship (for example, Kenya's development policy Vision 2030), or further export orientation and internationalization. Incubators should be alert to developments in the political context and benefit from evolving opportunities through lobby and advocacy activities. The national policies, regulatory framework and institutional infrastructure influences the ease of doing business in a country. The World Bank's Doing Business Ranking⁸⁹ gives a good impression of what constitutes the important dimensions. The index assesses how easy it is to:

- Registering a business

Partnering for funding

CURAD has entered an agreement with Centaury Bank who provides loans and credits in the coffee value chain. CURAD conducts due diligence and recommends enterprises for funding by Centaury Bank.

Scaling out incubation in Kenya

In Kenya, the government's Vision 2030 focuses on agriculture as a commercial undertaking and on science, technology and innovation as an economic driver. Devolution policies delegated responsibility for the agricultural sector development to county government who subsequently requested the services from SVCDC to establish local incubators.

⁸⁷ <http://www.scopeinsight.com/>.

⁸⁸ See for example: <http://www.vlerick.com/en/research-and-faculty/knowledge-items/knowledge/bootstrap-strategies-for-start-ups>.

⁸⁹ For an introduction to the Doing Business index methodology, see: <http://www.doingbusiness.org/~media/GIAWB/Doing%20Business/Documents/Annual-Reports/English/DB14-Full-Report.pdf>.

- Get a construction permit
- Get electricity
- Get credit
- Enforce contracts

At the local level it is important for the incubator to be aware of tax incentives and business-friendly legislation. Moreover the incubator should be able to advise the incubatees on issues related to access to basic infrastructure, telecommunication and transport.

SVCDC scaling up incubation in Kenya

Farm Africa, an international NGO and SVCDC collaborates within the Youth Empowerment in Sustainable Agriculture project. The project obtains support and farmer credits from the Kenyan government's Young Enterprise Development Fund (YEDF) that is established to strengthen and support youth groups to establish and manage agricultural businesses. The programme provides training and technical assistance in agronomy, helps groups to market their products, and encourages members to become active in local politics and governance

Incubators can also advise in relation to product certification and support the obtainment of certificates. In most countries, public authorization of agrifood products through certification with the National Bureau of Standard plays a significant role in marketing because non-certified products cannot access more formalized supply chains.

Incubators may also get actively involved in policy advocacy to enhance the conditions in the value chains they service. The involvement of NUCAFE, a CURAD AIIC partner, in the elaboration and popularization of the Ugandan National Coffee Policy⁹⁰ provides a good example.

4.3.7 Knowledge Adoption and Diffusion

With particular reference to agribusiness incubation we add a sub-system category to Isenberg's model in Figure 4.1: Knowledge adoption and diffusion. This field of practice play a significant role in agribusiness because of the close contact to the primary producers and the role of technology diffusion and adoption for enhancing agricultural productivity. Several of the AIICs are directly involved in knowledge adoption and diffusion. SVCDC's collaboration with the NGO Farm Africa is a good example (see Table 4.1). CCLEAR's engagement with WAAPP where the AIIC provides new grasscutter farmers with production technology, training and access to markets is another example of an AIIC engaged in knowledge transfer.

The core mission of UniBRAIN is related to innovation and diffusion of agricultural technologies developed by their research partners. FARA and the SROs' mandates are aligned with this mission. The SROs' role as UniBRAIN partners was to map research needs and bring out technologies from the national research organizations and universities. Similarly, the process of commercializing new agribusiness inventions is also addressed by private enterprises who are conducting R&D. Typically, neither national research organizations nor universities are experienced with the process of innovation and this is the role envisioned to be played by the AIICs, in collaboration with its partners and through its incubatees.

⁹⁰ Uganda's National Coffee Policy aims to support and strengthen coffee farmer organizations to participate effectively in the coffee value chain, streamlining and strengthening existing coffee laws and regulations at all stages and promote domestic consumption of coffee and develop the local market. See: http://ugandacoffee.go.ug/download/coffee_policies_and_regulations/National-Coffee-Policy.pdf.

Incubators need to be knowledgeable about how other actors in the innovation system engage in technology diffusion and commercialization and seek out potential synergies from collaborating with public and private partners. Innovation, i.e., bringing a novel invention from the prototype stage to the market is both costly and time consuming and often beyond scope of a single actor. Knowing the role and strengths of different actors in the entrepreneurial ecosystem enables the incubator to play a role as coordinators of such processes.

4.4 How Incubators Can Benefits from Integrating with the Wider Ecosystem.

In this chapter we have shown how agribusiness incubators interact with and use their surrounding ecosystem. We have shown how such interaction can benefit both the AIIC and the incubatees served by the AIIC. Which types of collaborations best support the AIICs in accessing resources and adding value to their own activities depend on their particular needs and existing resources, but as we have shown, many types of opportunities exist. Scouting for and recognizing value adding opportunities for engaging with other actors in the ecosystem is a core competence of incubator managers (see Section 6.3 on resource orchestration). UniBRAIN's tripartite partnership model expands the incubators outreach and AIICs should strategically plan for how to benefit from emerging and planned opportunities. But not all opportunities for collaboration are equally beneficial to the incubator and incubators need to apply a cost and benefit calculation before engaging in specific activities, as they should expect their collaborators to do. Creating mutual gains and synergies is important for sustaining inter-organizational collaboration.

5 The Tripartite Partnership Model

Key Lessons Learned – The Tripartite Partnership Model

Start-up and partnership development

- Find the right balance between preparation and capacity development (theory-driven) and experimenting with, reflecting on and learning from actual implementation (practice-based)
- The establishment of a cross-sectoral partnership (university, research, business) takes time, especially when new inter-organizational forms of collaboration are introduced into public organizations
- Ensure a common understanding of the incubation concept(s) among the partners
- The partner selection process is extremely important – make sure that competencies, capacity, motivation and engagement exist
- Ensure a joint and clear understanding of what each partner brings to the table and why they are necessary for success

Strategic decision making

- The tripartite UniBRAIN model offers unique opportunities but also contain potential challenges because of the partners' different institutional perspectives, missions and objectives
- Balancing for-profit and non-profit is difficult - however, non-profit incubators need to have clear for-profit activities in order to generate resources to support the non-profit ends and sustain the organization
- The physical location of the incubator is important – a poor location with difficult access means less customers and incubatees as well as poor networking
- Focus where you have expertise and can deliver high quality services

Business models and plan development

- Ensure integration between overall strategy, business model and business plans, and the operational systems to obtain profitability and sustainability
- Critically question the assumptions behind the models and plans
- Turning inventions into marketable products (innovation) is a costly process

Revenue streams

- Many NGOs support value chain development, technology transfer, entrepreneurship, etc. but few explicitly rely on incubation – this provides a business opportunity for agribusiness incubators
- AIICs can offer donor projects access to partner organizations' resources in an established and functioning inter-organizational framework. This ensures access to a unique combination of business experience and technology knowhow
- The non-profit label creates a negative incentive for customers to pay for incubation services

Structures and governance

- For AIIC partnerships to succeed, the sharing of responsibilities/benefits and costs/revenues needs to be clarified at the outset
- An MoU is not always enough – use relationship management and wise governance to ensure trust and harmony among partners
- Ensure clear roles and responsibilities for the BoD, TAC and incubator management
- Ensure that board members are trained in the role and function of a BoD
- Ensure that the CEO has sufficient discretion to manage and lead the incubator
- External board members can question taken-for-granted assumptions, provide an important outside perspective, and link to different networks and resources

In this chapter we review the lessons learned at the AIIC partnership level. We briefly introduce the six UniBRAIN incubators, their partners and the partners' roles in the AIICs. We describe the creation of the AIICs and review aspects related to the incubator partnership formation. We then discuss strategy formulation, business models and business planning - three important elements addressed in the incubator start-up phase. Moreover, we discuss critical aspects of the organization, governance and staffing of the AIICs.

5.1 Lessons Learned Survey Result

Table 5.1 shows the issues mentioned by interviewees in the lessons learned survey in relation to AIIC establishment and partnership collaboration. In relation to the 'aspects that worked well' respondents highlight partners' collaboration and motivation, the AIIC incubation model and the business model and partnership governance.

Table 5.1 Incubator management practices identified by interviewees in the lesson learned survey.

AIIC partnership level issues addressed in the lessons learned survey	Worked well	Challenges	Recommendations
Availability of donor funding	2	13	6
Choice of partners forming the AIIC	5	2	17
AIIC start-up phase	2	17	5
Project vs business logic	2	14	-
Company registration	1	4	1
AIIC incubation model	11	11	1
Incubator business model	9	7	27
Incubator business plan	1	-	-
AIIC location	-	4	2
AIIC physical establishment	1	-	4
Incubation facility	2	-	4
Lead organization	2	2	5
Partnership governance	9	14	16
Partnership management	-	-	8
Partners having clear roles	5	4	11
Institutionalization of the incubator	6	2	0
Partners' understanding of incubation	1	7	4
Partners' previous experience	5	2	-
Partners' motivation	15	1	4
Partners' collaboration	17	15	16
Partners' relationship	5	4	9
Influence from a partner's internal conditions	-	1	-
Partners' objectives and goals	5	-	6
Partners providing resources	5	4	-
Adaption of AIIC strategy to context	1	-	-
Learning from experience	1	-	3
Recruitment of staff	2	-	-
Externals agents view on the incubator	2	-	1
Board of Directors compositions	2	4	4
Board of Directors management	5	1	1

Main categories identified in relation to ‘challenges during implementation’ include the start-up phase, partner’s collaboration, project versus business logic, partnership governance and availability of donor funding. In terms of ‘recommendations for future incubator projects’ survey respondents mainly contributed with advice on the incubator business model, the choice of AIIC partners, partnership governance and collaboration and clear roles of partners. The topics that have attracted most attention largely correspond with the most important topics identified in Lesson Learned Workshops (Appendix 5) and during the interviews. The specific issues mentioned in the survey and other data sources will be addressed in the relevant sub-sections in Chapter 5 and 6.

5.2 Background

The UniBRAIN approach is built on the rational that economic progress relies on enabling skilful entrepreneurs’ access to adequate technology in order to develop sustainable businesses. The three key institutions in society responsible for this to happen are: universities that educate agribusiness professional; research institutions that develop new technologies; and the business community that meet customer needs through commercialization of technologies. The UniBRAIN model brings these three communities together in a tripartite partnership to enable them to collaborate in order to turn agricultural and agribusiness innovations into high-growth businesses. Together the partners have established Agribusiness Innovation Incubator Consortia (AIICs) as legal registered non-for profit organizations co-owned by but managed independently of any of the partnership organizations.

In the report on roles and responsibilities⁹¹ conducted in 2011, the consultant compiled a list of the areas of support that would be needed during the implementation phase. The list is provided in Table 5.2 and it is likely that most of these areas will also constitute challenges in relation to establishment of similar incubator programmes in the future. Thus, the list provides a useful checklist for future programme/project designers when considering potential challenges. Many of the areas in Table 5.2 were explicitly addressed by the UniBRAIN programme during the implementation phase, but some of the issues correspond to topics highlighted by AIIC participants during the lessons learned workshops and in individual interviews. In the following, we aim to integrate the different issues when relevant to our discussion

⁹¹ Consultancy to determine the roles and responsibilities of Unibrain partner institutions, 27 May 2011. Draft Report. Bente Consulting ApS.

Table 5.2 The UniBRAIN AIICs' need for support identified in 2011 (Source: Consultancy report).

<i>General considerations</i>
<ul style="list-style-type: none"> • <u>Political momentum</u>. Understanding the socio-economic and political context and navigating to make use of existing and potential opportunities through lobbying and advocacy activities. • <u>Geographical and language barriers</u>. The UniBRAIN facility must assure equal attention to and services to all AIICs independent of geographical location and language differences.
<i>Development of agribusiness innovations</i>
<ul style="list-style-type: none"> • <u>Exposure</u>. Need for exposure to new approaches and methodologies because of limited knowledge of possibilities outside the immediate institutional environment • <u>Value chain understanding</u>. Due to the size of the available funding it is necessary to focus the AIICs on one value chain • <u>Understand the incubator concept</u>. The AIICs are challenged by the agribusiness incubator concept, which is new to most • <u>Understanding the market</u>. The AIICs need support to investigate markets and brand their interventions • <u>Mentorship</u>. AIICs should have opportunities to engage in mentorship arrangements that expose them to other business incubators • <u>Internal governance</u>. AIICs need support in partnership management, establishment of boards, financial management, and institutional independence • <u>Monitoring and evaluation</u>. An M&E system should be established with the dual purpose of measuring results and provide information on lessons learned • <u>Woman and youth</u>. Specific efforts must be made to ensure that these prime target groups are explicitly addressed • <u>Resource mobilization</u>. The AIICs need to engage in close collaboration with financial institutions, support mechanisms, development funds and business development programs.
<i>Production of agribusiness entrepreneurs</i>
<ul style="list-style-type: none"> • <u>Curriculum development</u>. Strengthen the focus on a university curriculum that develops competencies necessary for self-employment • <u>Problem based learning</u>. PBL is a relatively unknown approach in university teaching in Africa and most AIICs recognize the need for support to develop PBL teaching approaches, change curricula and the mind-set to adopt PBL • <u>Internship</u>. Internships are applied in many universities, but the model needs to be directed towards private businesses. • <u>Support to graduates to start-up agribusiness</u>. Universities have little experience in supporting graduates in establishing businesses and will need support on how to establish such activities. • <u>Training programme development</u>. Training materials and programmes must be developed to train unskilled SME agribusiness owners
<i>Sharing and up-scaling outputs (UniBRAIN objective 3)</i>
<ul style="list-style-type: none"> • <u>Access to innovative technology and know-how</u>. Universities and research institutions often have readily available technological knowledge lying idle on the shelves. Often structures and mechanism for collaboration across institutional borders are missing, and the AIICs need to work on promoting the exchange of information and know-how across universities, research institutions and private sector. • <u>Advocacy</u>. There is a need for effective advocacy aimed at national governments and regional and international entities to ensure the best possible conditions for the AIICs • <u>Networking</u>. Exposure is important for the AIICs to function as incubators. Exposure should be multi-dimensional, i.e., horizontal among peer AIICs and vertical reaching out for professional institutions operation in agribusiness innovation.

5.3 The AIICs and Their Partners

5.3.1 Partner Characteristics

Table 5.3 shows the main characteristic of the six UniBRAIN AIICs. The AIICs are located in five countries, three in East Africa and two in West Africa. The AIICs cover a broad range of agricultural value chains from specific crops, to livestock to non-forest products.

Table 5.3 Main characteristics of the six UniBRAIN tripartite partnerships.

AIIC	Sector	Location	Overall business strategy (obtained from business plan)
Afribanana Products, Ltd. (ABP)	Banana	Uganda	ABP will provide all incubation support in order to ensure production of quality products including vacuum packed matoke, banana fibre based products, charcoal briquettes, animal feed and tissue culture seedlings through the identified entrepreneur segments by providing infrastructure, training, technology access, marketing support and capacity building in agri-entrepreneurship.
Agribusiness Incubation Trust (AgBIT)	Horticulture	Zambia	AgBIT will strive to maximise the returns to the farmer producer while reducing costs and risks by ensuring quality control across the horticulture value chain, providing input service packages, branding and marketing, updated market intelligence, market access, and scientific and technical support. AgBIT is the first incubator in Zambia.
Creating Competitive Livestock Entrepreneurs in Agribusiness (CCLEAR)	Livestock	Ghana	The incubator is poised to be a leading centre for the development, innovation and commercialization of livestock-based technologies within a public-private partnership environment.
Consortium for enhancing University Responsiveness to Agribusiness Development (CURAD)	Coffee	Uganda	CURAD will provide all incubation support in order to ensure production of processed coffee products at affordable prices through the identified entrepreneur segments by providing infrastructure, training, technology access, marketing support and capacity building in agri-entrepreneurship among students through its flagship programme called the Earn as You Learn Programme.
Sorghum Value Chain Development Consortium (SVCDC)	Sorghum	Kenya	SVCDC shall provide support in sorghum value chain through total seed support systems, food value addition services, feed production and marketing services, biofuel technology & business facilitation to entrepreneurs and training & capacity building in agri-entrepreneurship for students
West African Agribusiness Resource Incubator (WAARI)	Non-timber based forestry products	Mali	The incubator will provide comprehensive rural business hub services that are market lead in that they are being provided in response to identified problems and weaknesses faced by new and existing businesses operating within the non-timber forest product value chain. The following are the incubator services: value addition facilities, quality control services, branding and marketing, networking and business development, infrastructure and facility for incubation, facilitate investments, training and mentoring and educational programs.

The three main partner categories – universities, research organizations and businesses – were expected to provide support to the incubator based on their different core competencies and unique resource.

5.3.2 Examples of Partnership Synergies

The UniBRAIN model envisions that bringing together partners from universities, research organizations and the business community in a consortium to jointly own an incubator will lead

to the emergence of synergies. The underlying logic is outlined in Chapter 3. Here we show a few examples to illustrate how this synergy has materialized the UniBRAIN AIICs.

In CURAD in Uganda, NARO has made available seven coffee wilt disease-resistant varieties for commercialisation through CURAD. These varieties will improve farmers' crop protection against the wilt disease which has killed over 50% of Uganda's robusta coffee trees. CURAD nursery incubatees are vital in facilitating innovation and technology development, and creating enterprises that ensure smallholder farmers planting material. It is estimated that through this UniBRAIN commercialisation effort, over 20,000 smallholder farmers will access clean planting materials.

In SVCDC in Kenya, KALRO has provided new sorghum species and trained incubatee farmers in sorghum seed production. The private sector partner FASI has incubated local entrepreneurs to establish small-scale seed processing plants where the sorghum seeds are processed for commercialization. SVCDC has contracted five farmer groups that produce seeds of the new sorghum species as a cash crop which is marketed with the assistance of the incubator.

In CCLEAR in Ghana, the owner of the private sector partners, a successful commercial poultry farmer, is leading the incubatee mentorship and coaching programme of the incubator. The farmer is an excellent role model who brings the incubatees to his farm for hands-on training and to witness the business opportunities in agribusiness.

5.4 Development of the Partnership

5.4.1 Funding

All the AIICs recognize the importance of the funding provided by Danida through FARA. Without this opportunity this type of partnerships would not have emerged.

Funding related issues at the AIIC level that emerged in the lessons learned survey and interviews included:

- Clear expectations and requirements associated with the funding
- The allowed distribution between fixed assets and operational costs prescribed by the donor
- The disbursement procedure associated with the funding
- The ability to identify supplementary sources of funding
- The need for a more result-oriented funding model

Interviewees emphasized that programmes offering funding should strive to have clear expectations and requirements established at the application stage to ensure that applicants' are well-informed about the conditions for applying for a project. The UniBRAIN programme placed a cap of 20% of the total budget on fixed assets investment. The programme's assumption was that the tripartite partnerships would be able to provide much of the fixed assets setup needed to engage in incubation. As will be discussed later, the AIICs have seen the establishment of incubation technology centres that can provide incubations with access to production facilities as an essential element in a sustainable incubation model for the African agribusiness setting and they have found the 20% cap a limitation to realize this objective.

All AIICs argue that they have been limited and delayed in their implementation process due to the procedures associated with the disbursement process. They recommend faster and easier

procedures that allows for more agile business operations. This issue highlights the dilemma of implementing a business-oriented project (i.e., risk taking and opportunity seeking) thorough a classical development project mode (i.e., emphasis on predictability, transparency and accountability). It is recommended to carefully design financial processes to minimize processing time and to ensure that clear and open communication exists between the different parties involved to avoid unnecessary delays.

AIICs recommend that seeking supplementary funding should have been a much more explicit activity from the outset of the AIIC projects in order to ensure post-project financial sustainability. Future projects are recommended to address this issues from the outset, independent of whether such funding is expected to be self-generated, be provided by the guarantors of the project (the organizations constituting the AIIC), or be obtained in the form of project grants or endowments from other funding sources. Achieving sustainability is a complex process that depends on, for example, the scope of the project, the type of activities, the commitment of the partners, and not the least the AIICs' ability to demonstrate results.

Finally, future projects should consider the relationship between the funding mode and project objectives. Funding can be provided in fixed rates based on an initial outlined action plan. Or funding can be provided in a more flexible way based on demonstration of viable business models and market engagement, thus imitating market conditions. Future initiatives are recommended to consider how the design of the funding mode can be used to promote the type of behaviour that the programme wants to nurture, i.e., traditional project thinking or a more business-oriented conduct.

5.4.2 Partner Motivation

AIIC partners are motivated by different factors. The lessons learned survey identifies a number of reasons and highlights the importance of the partners' motivation for project success. Some are encouraged by the tripartite collaboration between university, business and research organizations. For example, at CURAD the UniBRAIN programme offered an opportunity to realize an already existing idea to make the agricultural education at Makerere University more practice-oriented and graduates more relevant for the business sector.

The AIIC partners' organizational gains constitute important drivers. For example, the basic idea behind the UniBRAIN model was that involved AIIC partners should leverage on their organizations to support the incubation agenda; ideally with the result that the incubator's activities would simultaneously support the partner organizations' missions and goals – private as

Box 5.1 How to choose incubator partners

- Well-selected partners with relevant expertise contribute to success
- Spend the necessary time to identify the right partners – do not rush
- Do a SWOT analysis of the potential partner and do in-depth due diligence before selecting
- The due diligence should be concerned with 'why' institutions want to be involved as well as their 'capacity' to fulfill the responsibilities they plan to accept
- Map out partners roles and mandate and match them with the incubator's needs
- There should be a demand for the services of each partner
- Select partners so that the consortium has a shared mission and vision for moving forward
- Involve partners with some experience in incubation
- The lead institution must already have a good network of supporting institutions
- Governments, local authorities and policymakers should be actively involved
- Take the necessary time to identify private sector players most appropriate for the incubator

(Source: UniBRAIN lessons learned survey)

well as public organizations. For example, KALRO's engagement in SVCDC enabled them to extend their outreach and disseminate more effective sorghum seeds to poor farmers who they were able to support for market access. Individual gains and opportunities also played a significant role. For example, the donor funding have enabled many professionals to conduct consultancy assignments, provide training workshops and other services, or participate in different committees or boards.

Several interviewees highlight that many motivational factors are at play simultaneously. Future project designers should carefully consider which incentives are established and how these influence participants engagement.

5.4.3 The Choice of Partners

The essence of the UniBRAIN model is to benefit from a business-university-research partnership. Any business incubator needs to rely on more or less formal partnerships, and the choice of partners is a crucial element in forming a successful incubator. Box 5.1 shows representative quotes from the interviews and lessons learned survey with respect to partner choice. The right partnership makes a huge difference to the effectiveness and efficiency of the AIIC. Partnership constellation has shown to impact a range of issues, for example, the speed of the formal establishment of the AIICs; the collaborative climate; the ability to achieve synergy between the resources provided by the different partners; and the ability and willingness to jointly seize and develop new opportunities, i.e., enhancing financial sustainability through new project development. Central to forming a successful partnership is partner compatibility and a significant effort, i.e., incubator needs assessment and mapping and verification of potential partners' capabilities and resources, should be made to ensure the right match of partners.

5.4.4 Business Logics vs. Project Logics

A consequence of grounding the AIICs on a business-university-research partnership is that different worldviews are forced to collaborate for a common goal. A consequence of the source of funding that enabled the establishment of the AIICs was that they were initially considered *"a typical donor project – where funds essentially have to get burned as per the specified time frame."* Partners from the different sectors operate with a different perspective and time horizon. Business partners typically argued that *"university or government bureaucracy have slowed down progress for the incubator."* On the other hand, public sector stakeholder might argue that *"private sector players were too aggressive and they never understood public sector principles."* To complicate the matter, the beneficiaries and customers also bring their perspective to the table: *"We experienced too many expectations of the incubatees who thought that the incubator was not a business entity but an NGO."*

A central difference between the business and public administration logic is found in the perception of risk. One project participant identifies the problem this way: *"Rather than trying to keep to a prescribed [business-] plan and regarding every deviation as a sign of impending failure, donor and host institutions should have accepted that failure is a natural, even essential, part of doing business."* These differences are natural and difficult to eliminate under the circumstances under which UniBRAIN was developed. Moving from a project to a financial sustainable business is a challenge: psychologically, organizationally as well as financially. The difference in values, perceptions and behaviours need to be explicitly addressed when forming partnerships. Interviewees recommend that the need for capacity development and cultural are

considered during the due diligence process and that a common ground is properly established before moving to the next step.

5.4.5 The Start-Up Phase

The inception phase of the UniBRAIN AIIC projects included registration of the incubators as formal non-profit enterprises, establishment of management and governance structures, and staffing of the incubators, which took approximately two years. This was significantly longer than anticipated in the UniBRAIN programme document. Many reasons contributed to this prolonged inception. Some typical reasons are mentioned by interviewees and survey respondents are shown in Box 5.2.

The main reason was probably that the incubator concept was new to all involved AIIC partners. This contributed to the fact that AIICs felt unclear about the UniBRAIN programme-level expectations. They also experienced that the central guidelines regarding the format of the type of organization to be established changed during the process. During the start-up stage these perceived uncertainties led the partners in one of the AIICs to consider themselves as both partners and incubatees, i.e., beneficiaries of the services to be developed. The necessity to create a common understanding of the UniBRAIN model and redirecting the partnership prolonged the establishment phase.

The elaboration of the business plans was time consuming and often conducted in a participatory manner during 2-3 day's workshops involving all partners and thereby creating both better understanding of the incubation concept and consensus solutions. Several interviewees highly recommend this collaborative and focused planning approach and argue that these workshops have been important events in creating a partnership spirit.

The formation of a partnership is time consuming and may require support in terms of proactively identifying good solutions for how to deal with conflicts of various types. Moreover, AIICs recommend that the start-up phase is used to establish all operational procedures and administrative rules. On the other hand, the UniBRAIN experience showed that this can be difficult if no one with experience in incubator management is involved. ABI-ICRISAT assumed the role of providing incubation expertise, but the lack of local and continuous presence of specific practical insight into the core operations of incubation has contributed to a significant delay.

Some interviewees argued that a faster inception would have been better: less training, earlier staffing, and initiation of operations at a less ambitious level. Moreover, the buy-in from the involved public institutions was important and this took time. It is recommended to ensure that high-level decision makers are sensitized and brought on board from the outset to ensure awareness and institutional ownership.

Box 5.2 AIIC start-up phase challenges

- Too much time during the preparation was spend on theory about agribusiness
- Lack of understanding of the Unibrain model in the beginning and lack of experience in running incubation and agribusiness
- Since incubation is a new concept, it took some time for the partners to understand it
- The definition of what the incubator is came late. Suggestions were coming as we moved on
- When there were changes in top management of the institutions new explaining had to be done
- Some partners were left out of the partnership because they were too slow to decide and commit
- Most of the administrators thought the AIIC would be operated like other research projects, where funds would be controlled through the usual financial management system of the institutions. When they discovered that this was not the case, they lost interest or wanted to change it

(Source: Unibrain lessons learned survey)

Interviewees and survey respondents recommend that projects are divided into phases providing dedicated time for constituting the incubator partnership and conducting due diligence that can forestall potential conflicts of interest. The necessary time required for this process is difficult to foresee, but should not be underestimated. The time frame and funding intended for implementation should count from once the partnership is properly established and has become operational. On the other hand, this requires significant flexibility on the part of the funding agency.

5.5 AIICs' Strategic Decision Making

In this section we discuss the relationship between business strategy, business models, business plans and operational processes. We argue that a clear understanding of these dimensions is necessary for efficient establishment of a new incubator programme. We also introduce a distinction between causal and effectual logics. We have observed a planning practice dominated by a causal logic, but an implementation practice dominated by an effectual logic. We contend that both approaches are necessary and discuss the possible potential advantages of a more balanced implementation strategy.

5.5.1 Causal vs. Effectual Decision-Making Approaches

Considering the institutional complexity involved, some level of structured planning was needed not only during the donor-funded phase but also later in the life cycle of the AIICs. The planning approach used by UniBRAIN to develop business plans for the AIICs was characteristic for a so-called 'causal logic'⁹² – the initial definition of goals and the subsequent identification of the means necessary to reach these goals. This logic is well-known to most AIIC partners because it is the rational underlying traditional research and development projects: first, the overall and intermediate objectives are defined; next, the outputs to reach objectives are identified and activities to deliver the outputs are designed; and finally, the inputs needed for implementing activities are identified and obtained⁹³. According to this logic, uncertainty and risks are identified and eliminated through thorough prediction of the future and planning accordingly.

But AIIC partners argue that the incubators could benefit from also using more exploratory business development approaches focusing on iterative development of emerging opportunities in close interaction with customers and other stakeholders. In fact, this is exactly what many of the incubator CEOs already does today, and we believe that it could be useful to support this type of management behaviour along with the traditional business model and business plan approaches.

We will briefly introduce two potentially useful approaches: Effectuation Theory and Lean Start-up. Both approaches stress that businesses are developed in close collaboration with customers and supportive stakeholder. The customer-focused approaches enable businesses to focus on the

⁹² Sarasvathy, S.D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of management Review* 26 (2): 243-263.

⁹³ The 'causal logic' approach is most clearly represented in the much used Logic Framework Approach.

demand-side and develop solutions that gain from customer input and the learning obtained from rapid prototyping of ideas, systems, products etc. Effectuation Theory⁹⁴ is empirically derived from studying serial entrepreneurs and the theory is increasingly applied in entrepreneurship education across the world.

The rationale of Effectuation theory is that business development relies on both effectuation and causation logics. In the initial phase when the venture is highly characterized by uncertainty, the management should minimize risk by developing their business based on the resources they control: physical as well as social and human resources that are already available. Contrary to the business plan approach that first defines the goal and subsequently spends considerable effort on obtaining the needed means to achieve this goal, the effectual approach focus on how the already available means can be applied to reach some broader defined goals along the direction of an overall objective. Exact goals are not the main focus because they may change in the process according to what is possible and demanded from customers. The development of the goals is seen as a co-creation process where the management engages in partnership with stakeholders who are willing to engage with the enterprise and co-invest to reach joint objectives. The co-investment from stakeholders adds new resources to the enterprise which may lead to the enterprise seeing new opportunities and adjusting its objectives and direction accordingly. Where traditional business plans are concerned with the competition and how to position the enterprise in relation to competitors, the effectual logic scouts the environment for partners with whom to co-create business opportunities.

In the business plan approach the expected return on investment is the main driving factor. Uncertainty and risk are minimized through prediction and analyses such as market surveys, SWOT and Porter's five forces. In an effectual approach uncertainty is controlled by initially deciding what the enterprise can afford to lose – and then limit the investment accordingly. The business plan approach aims to eliminate and avoid surprise through prediction of the future or by developing contingency plans. The effectual approach embraces uncertainty and aim to leverage on surprises. Rather than committing substantial resources to a specific long-term goals the enterprise retain the flexibility that allows it to pursue emerging business opportunities. Effectuation theory acknowledges that in certain stages of an organizations development or in certain contexts prediction of the future is not possible. Therefore, instead of relying on planning for the future, the solution is to co-create feasible solutions together with interested stakeholders and to control the risk by not committing more resources than the enterprise is willing to lose. Table 5.4 highlights the differences between the two ways of approaching entrepreneurship.

⁹⁴ For a fast introduction to effectuation theory see:
<http://www.effectuation.org/sites/default/files/documents/effectuation-3-pager.pdf>.

Table 5.4 Characteristics of effectuation and causation logics⁹⁵.

Issue	Effectuation logic	Causation logic
<i>Where to start</i>	Means	Goals
<i>Risk, return, and resources</i>	Affordable loss	Expected return
<i>Attitude towards others</i>	Partnership	Competition
<i>Surprise</i>	Leverage surprises	Avoid surprises
<i>Underlying logic and what to do</i>	Co-create to control - prediction is impossible	Plan - predict to control

A concept with some similarities to Effectuation Theory is the Lean Start-up approach. "The founders of lean start-ups don't begin with a business plan; they begin with the search for a business model. Only after quick rounds of experimentation and feedback have revealed a model that works do lean founders focus on execution."⁹⁶

Table 5.5 What lean start-ups do differently (Source: Blank, 2013⁸²).

Lean start-up approach	Traditional start-up approach
Strategy	
Business model	Business plan
Hypothesis-driven	Implementation-driven
New-product process	
Customer development	Product management
Get out of the office and test hypotheses	Prepare offering for market following a linear, step-by-step plan
Engineering	
Agile development	Agile or waterfall development
Build the product iteratively and incrementally	Build the product iteratively, or fully specify the product before building it
Organization	
Customer and agile development teams	Department by function
Hire for learning, nimbleness, and speed	Hire for experience and ability to execute
Financial reporting	
Metrics that matter	Accounting
Customer acquisition cost, lifetime customer value, churn, viralness	Income statement, balance sheet, cash flow statement
Failure	
Expected	Exception
Fix by iterating on ideas and pivoting away from ones that don't work	Fix by firing executives
Speed	
Rapid	Measured
Operates on good-enough data	Operates on complete data

⁹⁵ Table 5.4 is adopted from Sarasvathy, S.D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of management Review* 26 (2): 243-263.

⁹⁶ Blank, S. 2013. Why the Lean Start-Up Changes Everything. *Harvard Business Review*, 91 (5), pp. 65-72.

Table 5.5 summarize the main differences between the Lean start-up approach and traditional business planning. The main feature of Lean start-up is the ‘hypothesis-driven’ process. The entrepreneurs initial ideas about product and market are seen as hypothesis that need to be tested out by being confronted with the reality, i.e., customers and other stakeholders, as soon as possible in order to be verified or rejected. The sooner a hypothesis is rejected, the sooner the entrepreneur can redirect (pivot) the start-up’s effort in a more productive direction. Rapid iterations of prototype development, customer feedback, and change lead to faster development of successful products and solutions.

5.5.2 *Strategy and Business Plans*

As argued in Chapter 2, a strategic plan is an important best practice element of business incubator management. The strategic plan should indicate what the incubator’s vision and mission are and how it intends to position itself in the environment and in relation to its competitors and collaborators.

The UniBRAIN experience clearly shows that many other actors exist in the AIICs’ respective entrepreneurial ecosystems. In practice, there is a significant competition among public and private support programmes for the relatively few entrepreneurs with a real growth potential. Recognizing that a competitive value proposition is needed to attract the kind of incubatees and other customers that can develop into the success stories that can bestow the incubator with a reputation needed to obtain financial sustainability.

The strategic plan should show in which direction the incubator plans to develop in the future in order to position itself successfully in this competitive environment. Especially, in the context where an incubator is initially funded by a donor but with the expectation of becoming financial self-sustainable within a limited time horizon, an explicit strategy plays an important role. Box

Box 5.3 Strategic considerations

- If the mission is primarily socioeconomic development or business-oriented?
- Whether to rely on for-profit or non-profit status?
- Whether to profile the incubator as a public or private organization?
- Whether to rely on a formal partnership-based or a single organization ownership model?
- Who should be the lead organization and host the incubator in a partnership?
- What type of incubator to develop (value chain focused, mixed-model, for-profit, non-profit)?
- Should the incubator be integrated with other types of development concepts, such as cluster development or value chain upgrading?
- Which sector(s) to support?
- The number of value chains to engage with within a sector or across more sectors?
- The physical location of the incubator?
- Who the main targeted customers and beneficiaries (who are not necessarily the same) are?
- Who will guarantee the post-project sustainability if financial self-sustainability is not achieved?

5.3 outlines some of the strategic decisions and choices that founders of agribusiness incubators face. These issues have emerged during the interviews with the AIICs and in lessons learned survey.

Some UniBRAIN participants argued that the AIICs did not have the need, or the option, to elaborate their own strategy because the strategy was defined from the outset by the programme. Consequentially, assuming the strategy as given, the AIICs were developing business models and business plans fleshing out how the defined strategy could be implemented. This is a problematic view due to the above-mentioned sustainability dimension.

Whereas some initial conditions, for example, of forming tripartite partnerships, the development-oriented mission, the educational integration, and the short-term sustainability requirement were important

strategic decisions framing the projects, they did not constitute a strategy as such. Especially, they did not indicate how sustainability should be reached – on the contrary, some of the frame conditions constituted ‘creative obstructions’ to reach this objective, for example, the requirement of integrating an educational dimension in the AIICs’ mission was unlikely to become a revenue-contributing activity. As a result, the developed business plans to some extent were lacking strategic focus, for example, the business plans stated that the AIICs will provide services to producers (farmers and cooperative), existing processors (typically SMEs), whole sale and retailers and university student entrepreneurs. In practice, the lessons learned show that serving these different costumer groups (implied by the broad scope of the UniBRAIN model) requires very different skills, reputation and value propositions. One solution to this challenge would be to be more selective in the initial stages of establishing an AIIC in order to design and develop high quality service for a strategically chosen target group in an area where the AIIC has a distinct competitive advantage and where a positive cash-flow is obtainable.

In Chapter 2 we introduced two different perspectives that can drive the strategy formation: outside-in and inside-out. The AIICs essentially followed an inside-out strategy because the rationale behind the UniBRAIN model was based on the synergy that can be reached through the combination of different distinct types of resources provided by universities, research organizations and business enterprises. The ‘strategy process’ that was part of the initial business modelling which resulted in the business plans approved in 2012, the revised business plans from 2013 and lastly the sustainability plans elaborated in 2015, all illustrate this focus on the resources internal to the AIICs and on how these resources can, in principle, be used as a basis for value creation.

The causal logic is the rationale underlying the use of business plans. The business plan’s main justification is to specify the funding or investment necessary to realize its business case, i.e., identify the input needed and the roadmap for achieving the business objective. On this backdrop, the focus on business planning seems reasonable when implementing a donor-funded programme where the overall developmental mission is the starting point and the initial financial investment is secured. The causal logic framing presumably limits uncertainty and risk and ensures transparency and accountability – an important issue when operating based on public donor funding. As indicated in Chapter 3, this aspect has significantly influenced the design of processes and procedures in the UniBRAIN programme. The AIICs engaged in an activity novel to them, not only to the founding partners, but also for the local markets and the beneficiaries. The closely integrated triple helix⁹⁷ (government, private and university) setup is unique in the incubator context, not the least in Africa where the incubation phenomenon itself is novel. None of the AIIC partners had previous experience with operating this kind of organization. In this situation the business modelling and business plan elaboration supported by ABI-ICRISAT was an important source of learning about incubation for all the involved parties.

On the other hand, relying on a causal logic is also problematic in some respect. The most fundamental problem is that the assumption that reliable predictions of future input and outputs

⁹⁷ Etzkowitz, H. (2008). *The triple helix: University-industry-government innovation in action*. Routledge, New York.

can be obtained is highly problematic in the type of context in which the AIIC operates. The lessons learned are that realistic predictions are extremely difficult to produce. For example, the resources needed to provide high quality services, the complexity of engaging business mentors, the demand from established SMEs and the reluctance of incubatees to pay for services were often underestimated.

Another problem is that the apparent simplicity of some management tools, for example, the Business Model Canvas, may seduce the users to overlook the more complex aspects of establishing a new organization including ensuring strategic direction and the design of operational systems to implement the specific business plan. For example, the Business Model Canvas itself does not explicitly integrate an explicit strategy perspective⁹⁸.

The inside-out perspective assumes a good understanding of the actual internal resources and capabilities of the AIIC partners and the *core competencies*⁹⁹ that can be developed by the AIIC based on the partnership's inputs. Core competency can be defined as "a harmonized combination of multiple resources and skills that distinguish a firm in the marketplace"¹⁰⁰. The UniBRAIN model requires the formation of new practices across several organizations and the lessons learned is that it requires a significant effort to identify and develop the core competencies of an AIIC. This is not an easy task and it requires time and opportunities to practice and learn how to collaborate efficiently among the partners. In this context, a too heavy reliance on prescriptive business plans and models as the main planning and development tools may create challenges in relation to the flexibility needed to discover opportunities in areas where core competences can be developed to establish competitive advantage of the tripartite structure.

The main challenge related to the weak focus on strategy relates to obtaining sustainability of the AIICs. The UniBRAIN Project Document explicitly and repeatedly outlined the requirement for the AIICs to achieve financial sustainability during the initial period of donor funding, for example: "The UniBRAIN grants are intended to help the agribusiness incubators establish themselves as viable businesses within only four years. This means that they must be committed from the outset to firm business principles and practices." (p. xxi). The document also outlined

⁹⁸ The Business Model Canvas handbook has a special chapter on about "re-interpreting strategy through the lens of the Business Model Canvas". This section illustrates how well-known strategy frameworks such as Porter's five forces, SWOT and Blue Ocean strategy can be used to enhance the use of the Canvas (Osterwalder A. and Y. Pigneur, 2010, pp. 200-239).

⁹⁹ Prahalad, C.K. and Hamel, G. (1990). The core competence of the corporation. Harvard Business Review 68 (3), pp. 79–91.

¹⁰⁰ Schilling, M. A. (2013). Strategic management of technological innovation. International Edition, McGraw-Hill Education. P. 117. Etzkowitz, H. (2008). The triple helix: University-industry-government innovation in action. Routledge, New York.

¹⁰⁰ The Business Model Canvas handbook has a special chapter on about "re-interpreting strategy through the lens of the Business Model Canvas". This section illustrates how well-known strategy frameworks such as Porter's five forces, SWOT and Blue Ocean strategy can be used to enhance the use of the Canvas (Osterwalder A. and Y. Pigneur, 2010, pp. 200-239).

¹⁰⁰ Prahalad, C.K. and Hamel, G. (1990). The core competence of the corporation. Harvard Business Review 68 (3), pp. 79–91.

¹⁰⁰ Schilling, M. A. (2013). Strategic management of technological innovation. International Edition, McGraw-Hill Education. P. 117.

the main means of achieving such viability: “To become financially independent and earn surpluses with which to support start-ups the incubators must attract paying clients, drawn from firms of all sizes that want help in removing market, technical or policy constraints or with expanding, entering new markets or diversifying their businesses ... [and the AIICs] should initially focus on value chains where they have greatest comparative advantage but they may also take up commercial opportunities that may be on the shelves of their partner organisations ‘low-hanging apples’ in order to generate cash flow and create successes on which to build the reputation of their UniBRAIN brands (p. xxi).

Sustainability can be obtained in several ways. The incubator can be operated with a) a positive cash-flow from its operations (i.e., financial self-sustainability), b) a strategic funding that subsidises its operations, or c) it can be operated based on a capital reserve (i.e., based on capital gains from investing in incubatees’ start-ups). As mentioned in Chapter 2, the World Bank recommends a ten-year horizon when planning for sustainability of a new incubator. It is recognized by all involved parties, both at AIIC and UniBRAIN partnership levels, that the four-year programme horizon was too optimistic for achieving sustainability in terms of positive cash-flows. This implies that the AIICs continue to be highly dependent on the resources of the partner institutions in the post-project phase. The long-term institutionalization and potential patronage of the lead organizations was not explicated in the business plans, thus the question of institutional sustainability was largely left as an open question to be answered during the project implementation. But many interviewees argued that the time horizon was too short to show the results that could build the required credibility and reputation to ensure both the internal and external legitimacy necessary for achieving strategic funding.

The lack of an explicit, realistic, and operational strategic focus contextualized to the individual AIIC’s conditions and environment may have contributed to the development of overly general business models and plans lacking a clear identification of actual competitive advantages of the AIICs. A more explicit strategic focus could probably have supported a more realistic and contextualized definition of core competencies and enhanced the competitive edge. The lack of clearer strategies for organizational sustainability has also endangered the effort to achieve post-project sustainability. Several interviewees and lessons learned survey responses argued that sustainability should have been more explicitly addressed from the outset and not only a year before project closure.

UniBRAIN AIICs were required by the donor to be established as non-profit organizations¹⁰¹. For future incubators the decision to become a non-profit or profit seeking incubator is important. Each form has advantages and disadvantages. Some AIIC CEOs have experienced that the non-profit status has negatively affected their customers’ (incubatees) willingness to pay for the services provided. It is also argued that the balance between for-profit and non-profit is difficult

¹⁰¹ The status of the AIICs as “non-profit organizations” was mentioned in Annex 8 in the UniBRAIN Project Document. At the same time the Project Document stated that donor grants were intended to help the agribusiness incubators establish themselves as financially independent viable businesses that should earn surpluses with which to support start-ups. The potential dilemma involved in being a non-profit but revenue generation organization seems to have created substantial uncertainty among the AIICs regarding what constituted legitimate types of activities in the view of FARA and the Donor.

to strike. This dilemma is a result of an ambiguous mix of development and business objectives that a more clear strategy may help alleviate. CEOs find it difficult to convince beneficiaries to pay an organization for a service, when the organization is funded by a development agency. Moreover, similar services are available from other development projects without payment, which contributes to beneficiaries' unwillingness to pay.

5.5.3 The Business Model

The business models of the AIIC have been a central focal point during the entire UniBRAIN programme. The original call for projects published in 2010 requested the applying consortia to describe their project idea in the categories used by the Business Model Canvas and this model format has been used as the central element throughout the planning stage of the AIIC development. As an example, Tables 5.6 and 5.7 show the business model from CURAD. This business model is representative for the models created for the five other AIICs.

Table 6.6 Business model canvas for Consortium for Enhancing University Responsiveness to Agribusiness Development (CURAD).

Key partners	Key activities	Value proposition	Customer relationships	Customer segments
<ul style="list-style-type: none"> • Makerere University • National Union of Coffee Agribusinesses and Farm Enterprises (NUCAFE) • National Agricultural Research Organization (NARO) (Supporting partners) <ul style="list-style-type: none"> • NIRAS International 	<ul style="list-style-type: none"> • Ready know-how and business plan • Training and capacity building • Food QC, FSDA, EIA repository • Product development • Incubation infrastructure facility • Marketing and business facilitation • Facilitate funding • Backward linkages with processors, farmers • Technology development, testing and trials • Scientific support and technical consultancy 	<ul style="list-style-type: none"> • Ensuring production of processed coffee products at affordable prices through entrepreneurs • Providing value chain integrity • Enabling students to become entrepreneurs during studies and Earn as You Learn program 	<ul style="list-style-type: none"> • Membership and incubation agreement • MoA with network partners • Industry linkages • MoA with traders/partners • Our agriprenuers club • Membership in Earn as You Learn program • Mentoring 	<ul style="list-style-type: none"> • Coffee processing SMEs • Wholesale and retail SMEs • Agribusiness SMEs • Student start-ups
Key Resources <ul style="list-style-type: none"> • Funds: 2 m USD from UniBRAIN • Land and infrastructure from Makerere University Agricultural Research Institute • Human Resources: A team of nine staff members to deliver at different levels • Technologies • MICS and Networks 		Channels <ul style="list-style-type: none"> • Central Incubator in Kampala – own channel • Promotional camps • Funding camps • One-on-one meeting • Conferences and workshops • Field visits and trials • Training programs • Direct marketing • Agriculture and agribusiness curriculum • Online doctorate in business administration 		
Cost Structure (USD)		Revenue Streams Revenue (USD)		
Capital expenditure	498,500	Membership fee	17,000	
Operational expenditure:		ELP programme	98,000	
Coffee value chain based activities	283,000	Rent and lease	578,000	
Agribusiness incubation-based activities	178,000	Turnkey consultancy	702,000	
Student development and capacity development of CURAD under ELP Programme	332,000	Business development	621,000	
Human resources	403,200	Total	2,016,000	
Common operational expenses including communication and utilities	154,000			
Travel and entertainment	152,000			
Total	2,000,700			

Note: The Business Model Canvas is reproduced after the document: UniBRAIN AIICs Revised Business Plan prepared by ABI-ICRISAT, November 2013, pp. 31-32.

Table 6.7 Description of the business model canvas components in Table 6.6 (CURAD).

Value proposition	CURAD will provide all incubation support in order to ensure production of processed coffee products at affordable prices through the identified entrepreneur segments by providing infrastructure, training, technology access, marketing support and capacity building in agri-entrepreneurship among students through its flagship programme called the Earn as You Learn Programme.
Customer segment	The customer segment of CURAD includes coffee processing SMEs, wholesale and retail SMEs, agribusiness SMEs, student start-ups.
Customer relationship	CURAD will enrol entrepreneurs as its registered members and will provide incubation support for 1-3 years. Incubatees can also get technologies by signing technology licenses. CURAD will also link its incubatees with the national and international industry networks so as to promote their businesses. Incubatees can avail all marketing services from CURAD so as to ensure better price realization. CURAD will be unique in promoting students as entrepreneurs even during their study period in colleges through the Earn as You Learn programme. In addition to this CURAD will extend its continued support to its incubatees in sourcing funds for their enterprises, branding, financial management etc.
Channels	CURAD will reach its potential entrepreneurs by conducting Agribusiness promotional camps and Funding camps. It will popularize its activities in conferences and workshops conducted in its partner institutions. SMEs will be identified through field visits, training programs and other business fairs. Students will be reached by CURAD through its improved agribusiness curriculum and by implementing the Earn as You Learn Programme and Online Doctorate in Business Administration (entrepreneurship) through Makerere University.
Key activities	<p>Output 1: Development of agricultural business innovations in a conducive institutional setting linking universities, research institutions and private sectors</p> <ul style="list-style-type: none"> • Promotion of coffee processing and value added product SMEs. • Promotion and facilitating setting up of agribusiness enterprises. • Earn as You Learn programme and CURAD capacity building. <p>Output 2: Production of agribusiness entrepreneurs and innovators by improving BSc and MSc agribusiness teaching and training</p> <ul style="list-style-type: none"> • Customization of existing courses on agribusiness. • Provide modules / content on coffee value chain courses. • Provide training and orientation to students on agribusiness. • Involving students as interns for agribusiness clients. • Facilitating students to pursue online Doctoral Degree in Business Administration with specialisation in entrepreneurship. <p>Output 3: Sharing and up-scaling innovation outputs, experiences and practices through improved networking and channels of communication</p> <ul style="list-style-type: none"> • Business plan and incubation based documentation – CURAD can provide all its documents related to business incubation to new incubators. • Value chain business network – CURAD will expand its activities in scaling up its operations by forming new value chain based networks in other countries so as to promote agribusiness ventures in Uganda and other countries. • Agro project profiles – All potential agribusiness ventures will be identified during the project period and detailed project reports will be prepared which could be used by the incubators. • Technology profiles – Identified technologies in coffee and other value chains will be profiled in association with the partners which could be of great use to new incubators. This profile will contain all information about the technology and machinery suppliers. • Print/publication – Booklets on coffee production technologies, articles on successful incubations, book on best practices in agri-entrepreneurship, bring out a reference guide on business incubation. • Creation of funding platform – A common platform for facilitating funding of the incubators and incubatees can be created giving details of the funding agencies. • Formation of mentors network – A network of mentors across the country with experts from functional (marketing, finance, legal etc.) and domain areas (agriculture, horticulture, animal husbandry) can be formed to support the incubators and incubatees. • Mentoring and handholding of other incubators – CURAD can also help other countries in establishing new value chain incubators and facilitate them to attain sustainability.
Key resources	<p>Key resources required in promoting entrepreneurs are:</p> <ul style="list-style-type: none"> • Coffee processing and value added product SMEs – Technologies in production and processing of coffee, coffee processing machineries, SOPs, technical team with the required expertise, revolving fund, network of national and international buyers. • Agribusiness incubation – Technology repository, SOPs, technical team to provide incubation support, office space and laboratories for product development, testing and quality certification, financial assistance, networks. • Student start-ups – Land to lease out for students in the Earn as You Learn programme, laboratories, technical team, student revolving fund, client office, technologies etc,

Table 6.7 continued

Key partnerships	<p>Makerere University – For planning, coordination, facilitation, physical incubation, scientific support, infrastructure support, implementing Earn as You Learn Programme, framing new curriculum on agribusiness, offering doctoral studies in Business administration with specialization in entrepreneurship, scaling up CURAD's activities.</p> <p>National Union of Coffee Agribusinesses and Farm Enterprises (NUCAFE) – For planning, scouting SMEs in coffee value chain and other agribusiness, establishing farmers linkages, branding and marketing of coffee products manufactured under CURAD, networking with buyers, promotion of CURAD's activities in association with other partners and overall coordination.</p> <p>National Agricultural Research Organization (NARO) – To facilitate funding to incubatees, technical services, international collaboration, Training and capacity building, facilitating development of new curriculum, participation in the conduct of the Doctoral degree programme in Business Administration along with other partners.</p> <p>NIRAS International – To provide business consultancy services to clients and other new incubators.</p>
Cost and revenue streams	(More detailed budgets are presented but without any mentioning of underlying assumptions or justification for the magnitude of the expected streams)

Note: The table is reproduced after the document: UniBRAIN-AIICs Revised Business Plans prepared by ABI-ICRISAT, November 2013, pp. 32-34.

The recommendations made by AIIC CEOs and the lessons learned survey respondents regarding the incubation business models reflect the contextual and institutional diversity of the six AIIC. A summary of the recommendations are shown in Box 5.4. In some cases, AIIC partner organizations' mandate, capabilities and resources resulted in identifying farmers and farmer organizations as the primary target group for incubation. The incubation services have similarities to extension services but with a more explicit focus on promoting commercialization and market inclusion. For example, CCLEAR provides a service consisting of technical know-how, start-up equipment, and business development within a government funded agricultural development

Box 5.4 Business model recommendations

- Run the incubator as a business
- Expose the incubator to doing business
- Attract SMEs and larger firms as customers
- Focus on fewer value chains is better for higher quality delivery of service
- Focus on one value chain or value chains for one commodity to benefit from inter-linkages between activities
- Stick to your business model and don't be over-ambitious
- Be open to good opportunities outside your focus
- Less reliability on a single customer for agri entrepreneurs and more reliance on, for example, the government as buyer of incubatee products
- Find good revenue opportunities and focus on those customers who will pay more
- Incubatees need to pay for services
- For farmer entrepreneurs/producers a value-chain based clustering gives better impact
- For sustainability, incubators need to internally generate revenues (e.g. consultancy, training, production unit, marketing)
- Aim to develop replicable low cost revenue streams

(Source: Unibrain lessons learned survey)

programme. CURAD is engaged in training of coffee farmer groups and in marketing their produce. These strategies allow the AIIC to reach a large number of beneficiaries and rely on training and business concepts well-known to partners within the consortia. Several recommendations address the balance between individual incubatees and other customer types. It is recommended to limit the number of incubatees because these take significant time to graduate, they are unwilling to pay for services, and it is time consuming and resource demanding to provide these types of services. Rather than focusing on young relatively inexperienced graduates, it is recommended to focus more on accelerating already established start-ups with a proven business concept and growth potential. On the other hand, this advice conflicts with the main interest of university partners to promote entrepreneurship among their students and graduates.

When designing the incubation service and business models, the partners should carefully identify which resource each partner can contribute to the process. The tripartite UniBRAIN model is recognized as a strong setup for service provision, but it is also recognized that it is a complex setting that requires careful considerations on how to integrate the partners' different contributions.

The AIICs are struggling to find financially sustainable business models and respondents repetitively emphasize that sustainability has to be considered from the initial planning stage. As we will argue later in this chapter, many of the assumptions behind the business model generation, i.e., predictions of demand and supply are highly uncertain. Respondents recommend being flexible and adjusting business models as you learn more about the conditions influencing the implementation.

Several of the AIICs argue that some sort of certified food production facility for incubatees' small batch production is the most realistic basis for a sustainable business model. Such a facility enables coordinated marketing and revenue sharing and enables the incubator to generate income from its own production.

5.6 Business Plan Development

Interviewees argued that the use of business models and plans provided advantages in terms of clear frameworks for participants to learn about incubation and for identifying the partners' potential contributions and their relationship to the services provided. A good and joint understanding of the business model is stressed as an important prerequisite for efficient implementation. Several interviewees and survey responses stress that not only the incubation concept itself, but also the business model and business plan concepts were new to most of the partners in the AIICs. It seems that the practical operationalization of these concepts remained a challenge despite the training efforts by UniBRAIN to introduce these management tools and the practical supervision from ABI-ICRISAT.

The Business Model Canvas (BMC) tool developed by Alexander Osterwalder and Yves Pigneur (2010) was used by UniBRAIN. The BMC ensures that the major elements involved in a business operation are considered and, if thoroughly developed, the canvas can be a good basis for obtaining a common understanding of the business logic underlying the revenue generation. The challenge is that mapping the content of the nine building blocks that constitute the canvas (key partners, key activities, value proposition, customer relationship, customer segment, key resources, channels, cost streams and income streams) does not in itself capture the underlying operational system that connects and integrates the different building blocks. Listing the content is not necessarily challenging, but designing the operational system that enables all the different elements to interact in a value creating and sustainable business model is not an easy task.

The business model example in Tables 5.6 and 5.7 illustrate another risk. The content of building blocks tends to become 'laundry lists' of possibilities, rather than carefully selected elements that mutually support the execution of a well-trimmed business operation. It seems as if the entire opportunity space for the AIIC has been squished into the same business model. In this way the underlying complexity becomes incomprehensible and the presumed benefit of the BMC – to facilitate the development of a clear money-making rational – is easily lost.

Making different business models for each particular value proposition would probably be a more helpful learning process as well as actual management approach because it would have allowed the AIIC to think through more stringently the nature of the underlying operational setup designed and implemented to realize the different business opportunities. Doing so offers an opportunity to investigate the assumptions underlying the model. It is obvious from all the AIICs' business models that few of the assumptions made in the business plans worked in reality. The need to use clear, local and realistic assumptions in the budgeting process was stressed during several UniBRAIN Partnership Meetings. Incubator managers recommend involvement of the incubator's finance manager early on in a partnership's planning strategy meetings to avoid too many subsequent changes in the budget. Some interviewees commented that programme-level support is important to qualify the budgeting process and sufficiently scrutinize and challenge the assumptions, for example, in an effort to support the achievement of sustainability.

The challenges associated with the business modelling process are not surprising because no basis for predicting the demand or supply of the AIICs' services existed at the outset; and establishing such a basis would, in the best case, have been very uncertain and expensive. When embarking on totally new markets and developing new services much of the necessary insight needed to predict the future could only be obtained through trial and error. Thus, it is very likely that the AIICs could have benefited from using alternative or complementary approaches to the causal logic-based management tools.

5.7 Revenue Streams

The AIIC business plans clearly illustrate the many services that the incubators were expected to engage in. Box 5.5 shows the services provided by CCLEAR and illustrates the diversity in tasks addressed. It is also obvious that not all of these services are equally likely to generate significant revenue streams. The six UniBRAIN business plans envision that AIICs can service a range of customers including both private enterprises such as university graduate student start-ups, other start-ups, expanding firms, diversifying firms, firms seeking new markets, foreign firms entering local markets (soft-landing assistance), farmer cooperatives and institutional customers such as universities, national development agencies and international development cooperation.

Establishing continuous revenue streams in relation to these different customer segments has been a challenge to all AIICs. On the other hand, it is highly necessary to succeed doing so because as an AIIC CEO argues: *“for sustainability we need to internally generate revenues, for example through consultancy, training, providing production facilities, or marketing”*. The tripartite partnership construction should provide an

Box 5.5 Identified client services provided by CCLEAR

CCLEAR will provide the following services to support incubatee farmers, students and relevant stakeholders:

- Technical production and business advisory services
- Feed quality control laboratory services for feed standard maintenance, surveillance in feed quality and analytical services
- Microbiology & parasitology laboratory services to address livestock health needs and food safety issues
- Biotechnology laboratory services for research and diagnostics
- Feed formulation and milling services
- Hands-on training in dairy processing; modular classes in dairy processing techniques and commercialization
- Offer forage conservation training for incubatee farmers to help address dry season feeding problems.
- Curriculum review and development
- Internships and hand-holding
- CCLEAR Consort will assist farmers and District Assemblies to establish individual and community pasture fields and offer quality drought tolerant planting materials
- Credit support services will be given to incubatee farmers

(Source: CCLEAR's Revised Business Plan from 2014)

effective means for developing services for both the private and public market segment, but in practice, this has shown to be challenging. Especially, it has been difficult to develop the private sector market whereas several AIICs have been successful in attracting development projects assignments on a consultancy basis (see Section 7.3 for details on the realized revenue streams).

Table 6.8 shows the revenue categories that the six UniBRAIN AIIC CEOs consider most relevant during the developmental stage of an agribusiness incubator. The table shows the CEOs' perceived importance for the incubators' financial sustainability of the different revenue streams on a scale from 0 (not considered at all) to 5 (very important). The table also shows the estimated percentage of realized revenues in 2015 allocated to the income stream categories.

Table 5.8: Potential revenue streams and potential importance to the UniBRAIN incubators.

Potential income stream	ABP		AgBIT		CURAD		SCVDC		CCLEAR		WAARI		Ave. I	Range I
	I ¹	% ²	I	%	I	%	I	%	I	%	I	%		
Renting out technical facilities/equipment to incubatees and SMEs (agro-processing facility, coffee roasting equipment, cool van, etc.)	3	1.5	4	NA	5	1.0	5	NA	3	NA	4	NA	4.0	3-5
Sale of products, goods and commodity	5	62.0	5	-	1	-	4	-	2	-	5	-	3.7	1-5
Income sharing from incubatees sale	5	33.0	4	-	5	10.0	3	-	1	-	4	-	3.7	1-5
Consultancies for development partners/government	0	-	3	-	5	-	3	-	5	-	3	-	3.2	0-5
Rental income from physical space in incubator	3	0.5	3	-	5	-	4	-	3	-	3	-	3.0	3-5
Training and workshop services	5	0.5	3	-	2	2.0	4	-	-	-	3	-	2.8	2-5
Consultancies for large/corporates firms	0	-	4	-	2	-	3	-	4	-	4	-	2.8	0-4
Interest on loans given to incubatees (e.g., from revolving funds)	0	-	4	-	5	20.0	4	-	0	-	4	-	2.8	0-5
Consultancies for SMEs	5	-	2	-	1	-	2	-	4	-	2	-	2.7	1-5
Facilitating investments in start-ups (commission based on capital invested by investor)	0	-	3	-	3	1.0	3	-	3	-	3	-	2.5	0-3
Incubatees service fees (registration fee)	3	1.0	2	-	1	1.0	4	-	2	-	2	-	2.3	1-4
Equity holding/shareholder income	0	-	3	-	5	-	2	-	1	-	3	-	2.3	0-5
Sale of equity/company shares	0	-	3	-	1	-	2	-	1	-	3	-	1.7	0-3
Royalties from IPR/patents/commissions	0	-	2	-	1	-	3	-	1	-	2	-	1.5	0-3
Sale of secretarial and office services (photocopy, typesetting, secretarial support)	0	-	2	-	1	-	3	-	0	-	2	-	1.3	0-3
International agribusiness competitions ²	3	1.5	-	-	-	-	-	-	-	-	-	-	3	-
Private sector support and awards ²	-	-	-	-	5	65.0	-	-	-	-	-	-	5	-

Note: ¹ Perceived importance for the agribusiness incubators sustainability on a scale from 0-5 where 0 = not considered at all, 1 = not very important, 3 = reasonably important, 5 = very important. ² This category was added to the questionnaire by the respondent.

Incubatees' service fees have played a very small role in the AIICs income generation. One could argue that the AIICs have not been able to provide a service that incubatees are willing to pay for. On the other hand, the type of incubatees enrolled has mainly been unexperienced students and graduates with early stage start-ups. This customer segment is largely unable and unwilling to pay for services. The fact that the incubation service is provided by a donor-funded project has significantly weakened the AIIC's legitimacy of demanding payment for services. Most of the incubator CEOs argue that this kind of income will remain an insignificant revenue source in the future (score 2.3).

AIIC CEOs largely agree that renting out technical facilities/equipment to incubatees and SMEs is the most promising (future) income stream category (score 4.0). This is partly because a huge demand among start-ups for access to production facilities, especially technical facilities certified by the national bureaus of standards, where small batch production can be carried out without significant initial investments in machinery. Moreover, access to technical facilities is a controllable income stream, i.e., payment can be required prior to access. Some interviewees highlight the need to, and difficulty of, identifying replicable low cost revenue streams and renting out assets provides such an income source.

Second most important as income streams are sale of products, either produced by the incubator, or by incubatees sold under the incubator's brand or the incubatee's own brand (score 3.7). The range of perceived importance varies from 1 to 5 on both categories which illustrate the different characteristics of the AIICs' business models and the variation in business opportunities caused by the type of partners involved in the AIIC. For example, CCLEAR has access to the lead partner's agricultural production facilities and can produce and market their own products to generate income. CURAD through its business partners has access to a significant basis of coffee producing farmer cooperatives that request marketing services against a commission fee. AgBIT has established its own vegetable production and demonstration facility that produces for the local market.

Consultancies are also estimated to play a significant role. Especially consultancies for development partners and governments (score 3.2), whereas consultancies for consultancies for large/corporate firms (score 2.8) and SMEs (score 2.7) are considered less important. Several of the AIICs have obtained consultancy assignments for national and international development agencies and NGOs (see section 8.3). The perceived importance of consultancy as a revenue source varies significantly across the AIICs. The variation seems to be related to the different staff competences and experiences in the AIICs. Some AIICs are staffed with CEOs highly experienced in project development through previous employment in development agencies and NGOs. Other CEOs are more commercially-oriented and the variation is also influence by differences in access to opportunities through the networks that the different partnership organizations bring to the AIIC.

Income from interest on loans given to incubatees and from facilitating access to finance are considered reasonably important on average (score 2.8 and 2.5, respectively). Provision of funding for start-up is recognized as a significant motivation for joining the incubation programmes. Lack of funding is recognized in the lessons learned survey as the most important challenge and incubatee funding obtained the largest number of recommendation in the service provision category (see Table 5.6). All the AIICs have engaged in some form of micro funding

schemes based on the Danida funding. This may be a potential revenue source, but the model is not without challenges. For example, a recent Danida evaluation report¹⁰² noticed that this practice was implemented without referring to any professional expertise on, for example, risk assessment in relation to granting of credit.

Revenues from holding or selling equity in incubatees start-ups, and royalties from IPR/patents/commissions (score 2.3-1.5) are in general ranked low, although with significant variation between the AIICs. This reflects the different settings and market opportunities. The low perceived importance of IPR-based income generation is likely to reflect the nature of the legal environment, both in terms of the level of existing IPR legislation and compliance with the law and legal agreements. In general, for the technology level involved in the start-ups supported through the UniBRAIN programme IPR seems less relevant.

The results in Table 5.8 confirm the observations from the AIIC workshops and lessons learned survey that it is difficult to generate a revenue from providing incubation services to individual entrepreneurs and start-ups. Providing the same services through externally funded development projects is a more likely income strategy. Several of the AIICs are engaged in incubating farmers in projects where technical upgrading is combined with business training and market linkages. There is a general agreement that providing physical access to production facilities is a potentially very important source of revenues. Moreover, access to production facilities can be linked with marketing and sharing of sales revenues. Several CEOs argue that being able to control this process is a key to securing the revenue generation. Moreover, the survey also shows that on average the CEOs do not consider established private sector firms a very important customer segment. CEOs argue that SMEs are very unwilling to pay for services. Moreover, it may be difficult for the AIICs to compete with established service providers when targeting larger corporations. Here the constitution of the AIIC partnership can play an important role if private sector partners are included that are already established players in a specific value chain such as, for example, NUCAFE a partner in CURAD and a well-established player in the Ugandan coffee sector.

During the short start-up phase (2013-2015), it seems that the AIIC managements have pursued the opportunities emerging as a result of their existing resources, networks, core competencies and prior experience. In a way, the broad and less focused business plans offered the flexibility needed to shift from a product-oriented approach (listing all the possible products offered by the AIIC) to an effectual and more lean approach with a customer-oriented focus on developing services for which a verified demand existed. This seems a reasonable strategy given the requirement to achieve financial sustainability at the project closure (mid-2016), but as many project participants argue, the *de facto* 2-year window to achieve this goal was insufficient time.

¹⁰² Evaluation of the results of the Africa Commission: Realising the Potential of Africa's Youth. 2016. Danida: http://um.dk/en/danidaen/results/eval/Eval_reports/evaluations/publicationdisplaypage/?publicationID=8F62CF44-9B2E-4CCF-9C52-F594D1376401.

For future agribusiness incubators, the experience of UniBRAIN also highlights the need to consider which revenue streams are realistic at which stages in the incubator development as well as under which institutional and organizational preconditions.

5.7.1 The Use of Business Plans

The AIIC business models provided the basis for elaboration of business plans. This process was conducted by the consortia with support from ABI-ICRISAT. The six UniBRAIN AIIC business plans follow a similar template, and consist of the following elements:

- Executive summary
- Introduction
- Incubator history and current situation
- Vision, mission and goals
- Scanning the environment
- Industry/market analysis
- Swot analysis and business strategy
- Products and service plan
- Operations and production plan
- Marketing plan
- Competitor analysis
- Management and consortium governance
- Financial plan
- Risk planning
- Support systems
- Strategy implementation and monitoring plan

The format largely corresponds to the format proposed by NBIA. The business plans had to be approved by the UniBRAIN Facility in order for the AIIC to obtain funding to initiate the implementation phase of the project. All six business plans are approximately 80 page documents, plus appendices. In this sense, the original document developed in 2011-2012 may rather be considered a project document than a business plans. Acknowledging that this elaborated format was inefficient for communicating the AIICs to external partners, all six business plans were in 2013 revised into a 10 page format. The business plans were at the same time reviewed by the UniBRAIN Facility who provided suggestions on how to improve the plans.

The BMC is used to outline the business models of different services, for example, in the Products and Service Plan chapter of SVCDC's business plan four business models are provided for Seed Venture, Sorghum-Food, Sorghum-Feed, Sorghum-Fuel, respectively. Along the same line, the CURAD business plan introduces an overall 'combo business incubator model' business model canvas including four different value propositions and subsequently elaborate each of the value propositions separately. For example, CURAD under the value proposition 'Promotion and facilitating setting up of agribusiness enterprises' offers five product types: 1) Farm ventures (with a client segment including: farmers, woman entrepreneurs, students, SMEs and large companies); 2) Innovative ventures (farmers, students, SMEs and large companies); 3) Veterinary and animal husbandry ventures (individual entrepreneurs, SMEs and large companies); and 4) Other ventures (SMEs and large companies).

The business plans list the activities necessary in order to deliver on the value proposition. One business plan lists the following activities:

- Technical consultancy through the AIIC and its partners
- Prototype development support, including scientific support from partners
- Ready to use know-how and business plan – a selection of off-the-shelf business plans for retailers, wholesalers and agricultural input suppliers
- Training and capacity building in product processing, value addition, quality control, production economics, business modelling and planning, fund management, production promotion skills and agricultural technologies
- Facilitation of food QC, FSDA certification, and EIA processes
- Tech transfer and commercialization of technologies developed by research institutes
- Incubation infrastructure facility providing: office space, food technology labs, pilot processing facility
- Mentoring of students by university and industry partners
- Business planning and feasibility studies for entrepreneurs interested in establishing a processing unit or franchises
- Marketing and business facilitation of incubatees' products at promotional events
- Facilitate funding to clients through various government subsidies, banks, venture capitalists
- Backwards linkages of retailers and wholesalers with processors, processor with farmers associations, and farmers with input suppliers, and input suppliers with international agri-input companies
- Facilitate field trials
- R&D support and advisory consultancy
- Patent search and assistance through network partners
- IP protection and consultation through network partners
- Business facilitation
- Packaging and branding support
- Product promotion
- Technology development, testing and trials
- Facilitate deal for M&As and IPOs for incubatee graduation
- Provide guest lectures

The amplitude of the above list of activities is representative for all six AIICs' business plans. It may be a reasonable list of services that a well-established incubator and its partners could in principle provide, but it is questionable if a start-up incubator organization with 4-5 professional employees would be able to deliver or orchestrate all these different activities. It seems that this type of service profile would require a broad range of highly experienced professionals and reliance on a very well-networked organization. This may very well become reality for the AIICs in the future, but it is questionable whether this level of ambition is constructive in the initial establishment phases of an incubator organization.

The InfoDEV recommendation is to initially focus on 'innovation commercialization', i.e., incubate start-ups and SMEs. The ability to demonstrate successful incubation results is the main factor that legitimizes the survival of an incubator. If start-up incubators diversify their activities too broadly they run a risk of not being able to deliver on their main mission of incubation.

The UniBRAIN AIIC business plans vary in the level of analytical depth applied. For example, some plans include detailed budgets whereas others are less detailed. In general, the plans seem

very superficial in documenting the assumptions underlying the financial projections. In the 2013 business plan reformulation review the UniBRAIN Facility comments underscore the weakness of the financial estimations. Only one of the six AIIC seems to meet the requirements in terms of showing positive cash flow over the project period or indicating a financial sustainable post-project situation. The financial part of business planning is always challenging. Future incubator projects should consider involving financial experts in this process. If the investor's (or donor's) requirement is to achieve financial sustainability within a given timeframe, the business plan could be submitted for 'business-oriented' evaluation by a bank or venture capitalist to see if the business plan can live up to such an 'acid test'.

Interviewees' comments indicate that the business plans were not used as a dynamic planning tool in the interaction between UniBRAIN Facility and the AIICs. Several interviewees argued that more programme-level support in developing a realistic sustainability plan would have been useful. In 2015 a new round of business plan revision was initiated by the UniBRAIN Facility aiming to elaborate more realistic 'sustainability plans'. In general, the business plan should be a dynamic document that changes as the organization becomes more knowledgeable about the previously uncertain planning assumptions. It seems that relatively few changes were made in the scope of the AIIC operations even during the last (sustainability) planning round.

Research has shown that business plans are generally not used by start-up founders. Their main role is to legitimize the emerging organization, not the least in the eyes of banks and investors. There are good reasons for not following the business plans in the AIICs' case. As previously discussed, predicting the demand side of the AIIC projects was probably close to impossible. Thus, adjustments needed to be made according to the reality they faced during the implementation, for example, the extended establishment period that reduced the expected implementation phase with almost two years or the difficulties in engaging SMEs and corporations as customers.

Thus, incubator business plans should be 'living documents' that are adjusted when new information is obtained. This in turn requires that managers are conscious about integrating M&E frameworks with ongoing planning activities. For example, the partnership report (February, 2014) mentions that: "incubators seem to be engaged in many activities but the ultimate question was; to what extent would those activities contribute to increasing the number of start-ups or SMEs engaged with?" Periodically reviewing the relation between activities and successful incubation outcomes would give the incubator an indication of how to adjust its business model and which activities to concentrate on.

5.8 Organizational Structure and Governance

5.8.1 Organizational Structures

The AIICs organizational structure typically consists of:

- A Board of Directors (BoD)
- A Management Committee (MC)
- A Technical Advisory Committee (TAC)
- A CEO and or business manager
- The AIIC staff

An example of a mandate of a BoD is provided in Box 5.6. The composition of the BoD varies across the AIICs. In some cases the Board consist of partner organization representatives only, and in some cases external members are included. In the case of AgBIT, the partners carefully consider who to invite on their BoD. In addition to partners' representatives, AgBIT recommend including in the Board: a) a person with a financial background and industry insight/experience, b) a person that provides an entry point to the government, c) a successful private sector entrepreneur, and d) a person from the national-level technology research agency.

Board members must have a genuine interest and the ability to contribute to the development of the AIIC *“by helping the CEO move things.”* AgBIT makes sure that new BoD members are aware of AgBIT's expectations and that they accept to be replaced if they do not engage effectively in their role. The selection of BoD members should be done with great care and due diligence. Having the right members on the Board can make a significant difference to the AIIC.

The BoD at AgBIT has established three 3-person sub-committees: a) Finance & Administration, b) Audit & Legal, and c) Project & Technical. The Finance & Administration committee supports the CEO management with procurement decisions, work plan and budget approval, and networking with the financial sector. The Audit & Legal committee is complemented with a lawyer who is not member of the Board. This committee recommends an auditor to the Board, reviews agreements, for example, with incubatees, on technology transfer, and MoUs and agreements with collaborating partners. The Project & Technical committee is responsible for funds mobilization, review of projects proposed by the CEO, and provides technical advice to incubatees.

New incubators are recommended to ensure continuous and transparent communication practices within the BoD, between BoD and the CEO or incubator manager. Less than quarterly Board meetings are not recommended and incubators should elaborate an explicit communication

strategy to ensure efficient internal and external communication at all levels.

Some incubators have established a Management Committee that assists the incubator manager or CEO in the ongoing decision making. In some cases the incubator has a CEO that *“plays a political and strategic role, including interaction with the different institutions, creation/ broadening of the contact network and mentoring the incubator's growth and consolidation”* and an incubator manager who is in charge of daily operation (CCLEAR). In other cases the CEO plays both these roles.

Box 5.6 Mandate of the Board – Example from SVCDC

- Planning and outlining of strategies, systems and procedures
- Implementation of the mission and vision of the consortium
- Execution of partnerships and MOUs,
- Providing strategic inputs and directions for sustainability and mobilization of funds
- Strengthening linkages to enhance the value creation of the incubator
- To approve the investments and expenditure (budget) of business incubator operations and management
- Monitoring and evaluation of consortium performance
- The Board would induct the Executive Director (ED), initially the management staffs, the evaluation and appraisal of the ED
- Assessment of impact and outcomes of the consortium on society and farming community

The UniBRAIN model operates with the establishment of a Technical Advisory Committee (TAC) and all AIIC has implemented this entity in one form or another. An example of the mandate of a TAC is shown in Box 5.7.

The TACs seemed to have played an important role by providing a means of wider institutional anchorage and integration within the AIIC partnership organizations by broadening the number of employees engaged in the operations. On the other hand, the internally recruited TAC members in general suffered from lack of knowledge about and experience with incubation. The value of the UniBRAIN's TAC model is questionable if the TAC mandate is as outlined in Box 5.7. In this case, it is likely that a more explicit involvement of external representatives from the agribusiness sector

and the finance institutions might have provided a more realistic and critical evaluation of business ideas and management practices based on commercial experience and sector insights.

Box 5.7 Mandate of Technical Advisory Council (TAC) – Example from SVCDC

- To review business plans and provide recommendations to the incubator's Board of Directors
- To act in an advisory capacity for matters related to the management, contractual obligations and strategic development of the business incubator's operations, programs and other related initiatives and opportunities
- To advise the Board of Directors on matters relating to the maintenance and further development of a strong and viable business incubator program
- To regularly review potential tenant's business plans as they are submitted to evaluate and recommend new business tenants for the Board's consideration
- To review, advise and recommend to the Board the adoption of policies and procedures relating to the management and strategic direction of the business incubator

5.8.2 Governance

Good governance is mentioned again and again by interviewees as a prerequisite for a successful AIIC partnership. In Section 3.2 we summarized the defining characteristics of the partnership governance model. Facilitative factors for successful partnerships include partners' willingness to share power and their willingness to adapt to meet the partnership's needs. The survey and interviews confirm that well-functioning AIICs are adhering to these principles, for example, survey respondents recommend that it is important to "*uphold democratic principles in decision making by all partners*" and that "*decision must be made jointly.*"

Another principle is reliance on trust-based and informal as well as formal relationships. The importance of trust-based relations is emphasized by AIIC partners as a fundamental element in establishing well-functioning collaboration among the partners. But even more important is well-elaborated formal agreements in terms of partnership agreements, MoUs, and MoAs. The following recommendation is typical for all AIICs: "*It is critical to ensure that all MoU and MoAs clearly articulate the roles and responsibilities of each partner.*"

It is a clear recommendation that "*the governance structure must be clear*". A clear governance structure implies that "*the ownership of the incubator should be clearly defined.*" In the UniBRAIN programme the AIICs were required to be established as legal entities with a non-profit status and independent of the partners' own organizations. In most cases the legal status is a 'company limited by guarantee' (Ltd.). The experience shows that engaging public institutions in a private company can be very time consuming. In some cases this arrangement contrasted with

AIIC partners' organizational mandate or was even legally impossible according to the status of the public sector partners.

A good understanding of the formal roles of the different entities in the governance structure, for example, the Chairman of the Board, the Board of Directors, the subcommittees and the AIIC CEO is another important element in obtaining good governance. Governance practices and management cultures are different in different sectors, and public-private partnerships need to explicitly align their expectations to the collaboration. For example, that *"Board members are removed from the daily implementation of the project"* and that *"decisions by the Board of Directors must be implemented by the management team."* Several AIIC recommend appointing a non-partner representative, for example, an experienced politician, public servant or business person with professional Board experience as chairman of a Board. It is recommended not to take for granted that the expectations and practical skills associated with different governance functions are generally known but to ensure Board training and team building to enhance governance. Incubators should also establish clear strategies for conflict resolution, joint problem solving and relationship management at the BoD level and beyond.

A clear articulation of roles is one of the strongest recommendations given by AIIC participants. The rationale of the UniBRAIN model is that the involved partners can provide the AIIC with resources and services that strengthen the incubation programme. Different roles were associated with different budget allocations and since no standard 'blueprint' for how to design and organize this kind of agriculture incubator existed, a certain level of uncertainty regarding which roles to be played by which partners emerged. In some cases this reflected organizational or individual interests or difference in the perception of how to implement the AIIC project. Some interviewees recognized that the process of defining the roles may be difficult and that *"it could have been useful if after the partners had specified their mandates some sort of assistance could have been given to them to crystallize the same."* Written agreements may be ambiguously interpreted and it is recommended to establish *"well defined bylaws with supervision of all the partners in the implementation of the activities."* AgBIT have a very well-functioning BoD, which a Board member ascribes to the following reasons: *"We have no rewards to partners, so there is nothing to fight over. We each have particular roles, and no overlap. It is about benefits for AgBIT - not for the partners."*

Once agreements have been settled, it is also important to *"to adhere to or abide by the contents and terms in the partnership agreement"*. Partnership-based incubators should ensure to establish mechanisms to address situations where partners disagree on the interpretation of regulations and address these situations openly. Regular board meetings are highlighted as a means to enhance communication and avoid misunderstandings.

In relation to the relationship between the BoD and the CEO and incubator management, interviewees emphasized the importance of *"transparency in management"*, including that management team *"should be willing to avail to the Board or its committees relevant documents for internal checks and balances."*

5.8.3 Partners' Collaboration

The lessons learned survey shows that collaboration among AIIC partners is an issue that has offered both good and bad experiences and the respondents have a number of recommendations.

The answers can be grouped into the 14 categories shown in Box 5.8. The nature of the collaboration characterizes the degree of partnership which is influenced by the degree of mutuality and organizational respect (see Section 3.2). According to partnership theory, the degree of partnership is defined by:

- Equality in decision making
- Resource exchange
- Reciprocal accountability
- Transparency
- Partner representation and participation in partnership activities
- Mutual respect
- Even benefits
- Determining partner organization identities
- Organization identity within the partnership

Box 5.8 Reasons for good partnership collaboration

- Focus on incubator goals and objectives
- Mutual understanding of each other's positions
- Partners motivation and willingness to collaborate
- Collaborative and consensus based approach
- Transparency in decision making and financial issues
- Fair and just procedures
- Well-functioning BoD and TAC
- Communication among partners
- Team work among the partners
- Partners' contribution
- Partners' involvement in incubator activities
- Strong professional engagement
- Interacting in each other's activities (beyond the AIIC)
- Joint funds mobilization

(Source: Unibrain lessons learned survey)

The factors leading to good collaboration mentioned in Box 5.8., clearly reflects these eight dimensions. Some AIICs have experienced difficulties because the partners were very focused on the gains for their individual organizations. Probably, the most important advice is to “*focus on the incubator's goals and objectives*”.

“*Fair and just procedures*” refers to the application of fair and transparent decision-making processes where each partner has an equal say and where the partners are accountable to each other. This is closely linked with procedures that are based on “*collaborative and consensus-based approaches*” that creates a sense of equity in decision making.

“*Partners' contribution*” and “*partners' involvement in incubator activities*” underline the importance of partners' representation and participation in the partnership activities. Moreover, interviewees mention that collaboration is strengthened even more when “*partners interact in each other's activities*” beyond the partnership focus. One area that can contribute to collaborative relations is “*joint funds mobilization*” both for their individual organizations and for the incubator.

In the survey “*transparency*” is related to both decision making and financial administration and the role of “*communication among partners*” is highlighted as a very important element in establishing good collaboration and ensuring transparency.

“*Mutual understanding of each other's positions*” enforces the partner's definition of their own identity as well as the understanding of the other partners' identity. “*Strong professional engagement*” is also mentioned as facilitating collaboration. Professional engagement contributes to defining and sharpening the organizations' different identities. It is important that the individual partner organizations maintain their own distinct identity as partners in the partnership. This helps the partners to reinforce the mutual respect and maintain “*partners' motivation and willingness to collaborate*”. Lastly, even if “*team work among partners*” and “*a well-functioning BoD and*

TAC” is an outcome of good collaboration, their inclusion in the list highlights the importance of positive feedback loops when good collaboration leads to even better collaboration. Ensuring that a team spirit exists and consciousness about what creates good team work is an important element in the relationship management task of incubator leaders. An AIIC CEO argued that *“engaging more with various organs of the universities and research institutions is key to building better links between incubators, scientists, researchers and the private sector.”* In general, to harvest the synergy foreseen in the UniBRAIN model, it is necessary to continuously nurture the collaboration within the formal partnership.

5.9 Comparison of AIIC Business Models and Approaches

In this section we aim to compare the six AIICs, primarily in relation to their value proposition, ways of organizing and results. Table 5.8 lists the value propositions of the six UniBRAIN AIICs and Table 5.9 summarize the characteristics of each AIIC on a number of dimensions. The incubators are different on several dimensions. ABP, CURAD, and SVCDC have a distinct focus on a particular crop: banana, sorghum, and coffee, respectively. CCLEAR and AgBIT on the other hand, embrace a sector: livestock and vegetables, respectively.

Table 5.8 Value propositions of the six UniBRAIN AIICs (Source: Revised Business Plan 2012-2015).

AIIC	Value proposition
ABP	ABP will provide all incubation support in order to ensure production of quality products including FREVASEMA, Banana fibre based products, charcoal briquettes, Animal Feed and tissue culture seedlings through the identified entrepreneur segments by providing infrastructure, training, technology access, marketing support and capacity building in agripreneurship.
AgBIT	Assuring value chain integrity - AgBIT will strive to maximise the returns to the farmer producer while reducing costs and risks by ensuring quality control across the chain, providing input service packages, branding & marketing, updated market intelligence, market access, and scientific and technical support.
CCLEAR	The incubator is poised to be a leading centre for the development, innovation and commercialization of livestock-based technologies within a public-private partnership environment.
CURAD	CURAD will provide all incubation support in order to ensure production of processed coffee products at affordable prices through the identified entrepreneur segments by providing infrastructure, training, technology access, marketing support and capacity building in agripreneurship among students through its flagship programme called the Earn as You Learn Programme.
SVCDC	SVCDC shall provide support in sorghum value chain through total seed support systems, food value addition services, feed production and marketing services, biofuel technology & business facilitation to entrepreneurs and training & capacity building in agripreneurship for students.
WAARI	The incubator will provide comprehensive rural business hub services that are market lead in that they are being provided in response to identified problems and weaknesses faced by new and existing businesses operating within the value chains the incubators is initially focusing its activities on.

Thus, all incubators have value chain-related activities, but they approach this in different ways. Through one of its SME partners (called ‘technology holders’), FREVASEMA, ABP is involved in an entire value chain from production of matoke bananas, over processing and packaging to final national and international wholesale. ABP is thus involved in coordinating an integrated value chain. CCLEAR has a similar involvement in the livestock value chain where they market meet product from incubatees as well as from one of the partner’s own production facilities.

CURAD's involvement in the coffee value chain can be characterized by an integrator role. Through its partner NUCAFE, CURAD is involved in training of coffee farmer cooperatives and marketing of their coffee, but CURAD also supports incubatees in coffee processing SMEs and the coffee shop business. AgBIT explicitly aims to play a role as value chain integrator in the vegetables sector, supporting farmers' productivity, securing quality and organizing sourcing for wholesale. Thus, the AIICs address the incubation task very differently. Important drivers for which approach is taken seem to be: 1) the interest, mission and resources of the partners, and 2) the prospects of income generation for the AIIC. Interest, resources and opportunities shape the scale and scope of the value chain engagement. Thus, in practice, the concept of 'a value chain incubator' can appear in very different modes of expression and the *de facto* business models that emerges out of purposeful design, necessity or interest can be very different.

The main types of revenue streams also vary between the five AIICs (a more thorough discussion of the AIICs' revenue streams is provided in Chapter 7). The main income categories include:

- Sale of products, goods and commodities
- Consultancy for development partners/government
- Income sharing from incubatees sale
- Training and workshop services
- Private sector support, grants, and awards

ABP, AgBIT and to some extent CCLEAR have generated a substantial part of their revenue from selling products, goods and commodities. Notably, ABP has been very successful, and ABP is the only incubator that reports to have obtained revenue sharing from incubatees' sales. AgBIT, CCLEAR and SVCDC have been successful in generated revenues from consultancy jobs, primarily for development agencies and NGOs. Training and workshops have played some role for all AIIC expect ABP, and only CURAD has been able to attract private sponsor funding. The different revenue profiles reflect the AIIC's capabilities and resources available for the AIICs to aim for achieving sustainably in the short term. For example, consultancy plays a very dominant role, despite this kind of activity seems to be less in line with the core function of a business incubator. Overall, based on the revenue streams the incubators differentiated into four different (business model) categories:

- Production and marketing (ABP)
- Production and marketing, and consultancy (AgBIT, SVCDC)
- Consultancy and training (CCLEAR)
- Training and incubation (CURAD)

Table 5.9 Comparison of the six AIICs on key parameters.

Dimensions	ABP	AgBIT	CCLEAR	CURAD	SVCDC
Type of incubator	Commodity based, value chain	Sector focused, value chain integrator	Sector focused, value chain	Commodity based, value chain, mixed	Commodity-based, value chain
Incubation focus	Technical skills training; production and marketing-based	Business incubation; marketing-based	Technology diffusion; production and marketing-based	Production and marketing based; mixed business incubator	Technology diffusion; production based; mixed business incubator
Main revenue streams	Sale of own products; revenue sharing with incubatees	Sale of own products; consultancy	Consultancy; training and workshops	Private sector sponsorship; training and workshops	Consultancy; sale of own products
Operating income USD (2012-2014) ¹	20,608	19,721 ²	17,079	6,262	0
Operating Expenditure USD (2012-2014) ¹	723,302	801,985	684,863	539,239	410,641
Lead partner	University	Private	Research organization	University	University
Private partner	Five start-ups/SMEs	Consultant firm	Poultry producer, NGO	Farmer cooperative network	Consultancy firms
Facilities	Main office; decentralized production hubs; main production facility	Main office, incubatee office space, production facility	Main office	Main office, incubatee office space; coffee processing facility (under construction)	Main office
Chairman of the Board	External/ CEO public research organization	External/ business owner	External/ business owner	External/ former minister	Internal/ university vice chancellor
Involvement of other AIIC partners	Medium	Low	Low	Medium	Medium
Number of CEOs during implementation	2	1	2	2	3

Note: ¹ Data obtained from the Evaluation of the results of the Africa Commission: Realising the Potential of Africa's Youth review¹⁰³. ² The income has been adjusted for exchange rate gains.

The AIICs also differentiates in a number of organizational aspects. Three AIICs have universities as lead partners, two has a private lead partner and one has a research organization as the lead partners. The three university-lead AIICs are all commodity based whereas the private and research lead apply a broader sector perspective. Although the AIICs provide some office space

¹⁰³ Evaluation of the results of the Africa Commission: Realising the Potential of Africa's Youth. 2016. Danida.

for incubatees, this is not a major service. ABP provide access to five decentralized production hubs or workshops, where incubatees are trained in technical aspect of production processes. SVCDC provides incubatees with access to production equipment installed at the university partner. All the incubators have as a goal to establish production facilities where incubatees can experiment, and produce prototypes and small batches under certified conditions, but the AIICs argue that the UniBRAIN funding has been too limited to implement this strategy.

ABP is distinguished from the other AIICs by enrolling graduates with little technical experience who are first required to complete a 4-6 month technical skills training period before entering the business incubation programme aimed at establishing a business based on the technology they have been trained in. The other AIICs enrol incubatees based on their own business ideas either within a specific commodity-based focus (SVCDC), a sector focus (AgBIT, CCLEAR) or just requiring a relation to agriculture in a broad sense (CURAD). Incubatees are generally segmented into two categories: 1) established farmers who primarily receive technology and input advice and support, and marketing support, and 2) entrepreneurs and graduate students who aim at launching a start-up based on their own ideas and who go through a more traditional incubation programme. In principle, there seem to be limited variation in the design of the incubation processes at the four AIICs, but the intensity and level of individual supervision and support may vary.

The AIICs seem to vary significantly regarding how intensively they have internalized the tripartite logic of the UniBRAIN model. Some partnerships have been able to develop excellent working relationship, whereas others have had difficulties establishing collaboration. Among those where collaboration is constructive, some have been able to integrate all partners in the tasks of the incubator, and others have been less successful in doing so.

Table 5.10 summarizes the accumulated achievements of the AIICs' on key performance indicators. The table builds on self-reported data from the AIICs. The number of start-ups incubated varies from 10 to 52 with CURAD as the most productive. This is probably explained by CURAD's CEO being the only CEO who had previously been an incubatee and who had worked in an incubator before joining CURAD. The number of established firms supported vary from 2-97, with CCLEAR as the most productive. This is explained by CCLEAR's inclusion of incubation in development projects where a larger number of incubatee has been reached within a project framework. The number of jobs created varies from 70 to 1,885. Revenues vary from USD 8,000 to 388,045. The significant variation in revenues clearly illustrates the challenge of establishing viable business models. This is further highlighted by the magnitude of the total profit in the period 2012-2014 obtained from the audited accounts. These numbers clearly indicate the difficulty that the AIICs have had generating positive cash flows.

In this section we have compared the six AIIC and identified significant differences in both performance and their ways of organizing. It is evident that even with the same theoretical point of departure, the UniBRAIN model building on a tripartite partnership philosophy and a network of programme-level support organizations, the interests and missions of the partners, the staffing of the incubator and the resources made available to the incubator shapes their trajectories in significant ways. In the subsequent chapter we will look into some of the incubator-level mechanisms that influence this differentiation process.

Table 5.10 AIIC accumulated achievements during 2012-2015 (Source: UniBRAIN Facility, 2016).

Main objective areas	Indicators						
Output #1		ABP	AgBIT	CURAD	CCLEAR	SVCDC	WAARI
Start-up agribusiness supported incl. university graduates	No. of start-up agribusinesses that have be incubated	32	38	52	23	10	31
	No. of jobs created	460	300	1,885	203	300	70
	- Of which part-time	176	70	618	54	45	23
	- Of which full-time	284	230	1267	149	255	47
	Total revenue generated by incubatees (USD)	129,478	195,500	388,045	166,000	8,000	880
	Total profit ¹	20,608	19,721 ²	17,079	6,262	-	-
	No. of technologies commercialized	12	6	14	4	8	7
	- Of which successfully commercialized	6	4	5	4	4	6
	No. of graduates who have established own businesses within one year of graduation	9	4	17	8	10	-
	- Of whom are female	5	-	7	2	4	-
	- Of whom are 35 years or younger	9	3	16	8	10	-
	No. of targeted graduates who are employed within six months of graduation	33	34	28	1	10	-
	- Of whom are female	19	11	15	-	5	-
	- Of whom are 35 years or younger	33	32	26	1	10	-
Enhancing innovation in established businesses	Number of existing agribusinesses to be supported to expand, diversify, enter new markets etc.	20	35	15	97	10	2
	No. of assisted businesses reporting increased income, reduced costs, or decreased production time	3	35	14	97	10	2
Farm families benefiting from expanded markets and better prices	No. of farm families to benefit as suppliers to supported agribusinesses	682	690	12,189	925	600	1,642
Output #2							
Improving agribusiness education	No. of graduates that have benefitted from improved agribusiness education (internship, attachments, reviewed or new curriculum)	367	354	195	55	32	105
	- Of whom are BSc and Diploma	362	330	184	52	30	90
	- Of whom are MSc	5	24	11	3	2	15
	- Of whom are female	142	114	62	9	9	63
	- Of whom are 35 years or younger	362	354	190	54	9	105

Note: ¹ The income indicator was not part of the UniBRAIN performance indicators. ² Income has been adjusted for exchange rate gains.

6 Agribusiness Incubator Management

Key Lessons Learned – Agribusiness Incubator Management

Managing the organization and relationships

- Full self-Recruitment of incubator staff is challenging – few professionals have knowledge of the incubation processes – therefore, devote time, search widely, involve experts in recruiting, notably when identifying the incubator CEO
- Heavy administrative processes and management structures negatively impact performance – develop systems that support agile decision making and lean management
- Open and timely communication and clear distribution of roles between BoD, TAC, CEO and incubator staff is crucial for organizational efficiency

Managing resources

- Resource orchestration (identifying resources, bundling them into products/services, delivering them to customers) is a critical competence for the incubator CEO
- Resource orchestration enables the incubator to benefit from the resources available in the entrepreneurial ecosystem

Managing the incubation process

- Critically consider the implications for sustainability of who you want as incubation customers – young people, university students, women, experienced entrepreneurs, and SMEs require different services and provides different revenue opportunities
- Clear communication of what the incubator can offer and an initial adjustment of incubatees' expectations is important
- Due diligence in the incubatee selection is extremely important – successful business incubation depends on the quality of the incubatees enrolled
- A realistic number of incubatees in a newly started incubator is probably closer to 5-10 than to 30 – consider the practical implications of servicing out-of-house (e.g., farmers) rather than in-house incubatees
- Individualized support to the incubatees is important – general 'teaching/training' approach is of limited value for solving specific problems for unexperienced entrepreneurs
- Technical support for new product development, marketing and finance are difficult services to deliver – avoid over-promising and clarify the incubatees' own responsibility
- Access to funding for incubatees is a huge challenge – strategize for solutions and train incubatees in bootstrapping strategies
- Providing mentorship is a challenge – if no mentorship culture exists, then create your own culture within your network

Monitoring and evaluation

- Set goals and targets that are realistic
- Use simple and proven M&E tools
- Do not let the 'fear of failure' influence your information exchange – share ideas and information on what works and what does not

In this chapter we present and discuss the lessons learned from the incubator management in the six AIICs. After having presented the lessons learned survey outcome, we review and discuss issues related to the organizational structures and processes. We then dedicate a section to how managers orchestrate resources to achieve organizational goals. Next, we summarize the different types of services provided by the AIICs before focusing on their core service: the incubation process. We finalize the chapter with a discussion of monitoring and evaluation processes.

6.1 Lessons Learned Survey Results

Table 6.1 shows an overview of the types of incubator management issues mentioned by interviewees in the lessons learned survey. Collaboration with external parties (beyond the AIIC partnership members), incubatee recruitment, staff characteristics, collaboration with the BoD and TAC, and the incubator management and leadership are most important categories in the ‘aspects that worked well’ group. Major categories identified in relation to ‘challenges during implementation’ include incubatee recruitment, the business model, implementation efficiency, and internship management. In terms of ‘recommendations for future incubator projects’, incubator business model, operational procedures and systems, incubatee recruitment, collaboration with BoD and TAC, and income generation opportunities score the highest.

Table 6.1 Incubator management practices mentioned by interviewees in the lessons learned survey.

Incubator management practices	Worked well	Challenges	Recommendations
Adaption of services to customer needs	2	-	1
Income generation opportunities	3	2	15
Collaboration with BoD and TAC	11	3	15
Collaboration with externals	14	-	14
Customer relationship (non-incubatees)	2	-	-
Follow up on incubatee activities	10	2	13
Incubatee recruitment	13	9	21
Gender equality	-	-	2
Incubation time	-	-	1
Incubator implementation efficiency	6	5	7
Incubator management and leadership	11	-	13
Incubator planning	2	1	6
Internship management	6	5	3
Intellectual property rights management	-	-	3
Knowledge sharing with externals	1	1	-
Marketing of the incubator and its services	5	2	10
Operational procedures and systems	-	-	24
Staff attitude	3	-	7
Staff business knowledge and sector experience	1	-	1
Staff characteristics	12	3	-
Staff incentives	1	-	1
Staff recruitment	1	2	2
Staff technical knowledge	-	-	6
Staff training	-	-	11

6.2 Organizational Management

The importance of a CEO or incubator manager with good leadership and management skills are emphasized by many interviewees and survey respondents as crucial for success. The manager should know the incubation concept in theory and practice and have insight into the relevant agribusiness sectors. Skills and competencies that respondents mention as contribution to success include:

- The ability to manage change and uncertain financial dynamics
- Understanding of business systems
- The ability to follow-up and monitor the incubators progress
- Offering support and time for staff to learn their roles well
- Setting clear expectations for staff members and customers as a way to empower them to take ownership of their domains
- Awareness of the challenges in incubation

Another important element for achieving success is the ability to ensure an “*open communication between AIIC partners, the BoD, the TAC and the management for streamlined and efficient operations.*” A good working relationship between the management and the entire BoD is often mentioned as an important factor. Moreover, “*the incubator management should be independent of the BoD to prevent the interference from the latter.*” Several recommendations indicate that it can be difficult to find the right division of tasks between BoD and incubator management: “*Board members should play a minimal role in the implementation of decisions taken by the Board as this should be the prerogative of the management team*” and “*Operations should be clearly separated from the Board.*” It is recommended to obtain expert support and elaborate clear task descriptions if participants are unexperienced with respective roles. Good communication practices are emphasized and “*regular Board and management meetings enabled success.*”

The TAC also interacts with the incubator management and “*cordial relationship between TAC and management ensures absence of conflicts and misunderstanding*”. The TAC’s role has varied between the AIICs. One use of the TAC is to “*prepare catalogue of resource personnel and their expertise, identify the technical needs of the incubator and incubatee and assign TAC members with relevant expertise.*” In general, the role of TAC should be clearly defined and its position recognized in the incubator’s standard operational procedures. Respondents emphasize the “*allocation of sufficient resources to TAC functions*” and that it can be necessary to “*harness TAC members’ competencies to serve incubator and incubatee needs.*”

“*Partnerships and collaborations are key in incubation.*” A very important competence of the CEO is to be able to develop collaboration with other actors in the surrounding business environment and entrepreneurial ecosystem. Box 6.1 shows survey respondents recommendations regarding collaboration with external agents. Several respondents highlight the importance of engaging the government in the incubator operation. The government is an important source of resources, legitimacy and business. For example, ABP obtained both physical resources and public goodwill after being recognized by the presidency of Uganda for its effort in the banana value chain. CCLEAR engaged with projects funded by public agencies where they provided a combination of technical training and business incubation to farmers.

The incubators also benefit from private sector partnerships. For example, AgBIT helps the seed company Stake Ayres to promote their products through demonstration plots at the incubator facility. On the other hand, AgBIT obtain income from selling the vegetables grown in the plots. A similar agreement is made with a producer of greenhouses that are displayed at the AgBIT demonstration plot and used for vegetables production and incubatee training. CURAD and AgBIT engage with the private sector to stage entrepreneurship competitions that corporate firms can use as promotion and CSR activities and the AIICs can use for incubatee recruitment. At CURAD part of the award offered to the best start-ups constitutes of business development support provided by employees in the companies sponsoring the competition.

Many organizations in the entrepreneurial ecosystem are involved in some sort of entrepreneurship support. In some cases, these opportunities complement activities at the AIICs who can then refer their incubatees to other organizations for additional support, for example, as when SVCDC helps its graduate student incubatees to continue their incubation process in a USAID-funded

accelerator programme under GAIN. Such programmes may appreciate the help from the AIICs in recruiting promising start-ups what have already passed the proof of concept stage in the AIIC.

As part of the inception stage, the UniBRAIN programme provided AIICs with standard operations documents. For example, the standard Policy and Procedures Manual (CCLEAR) contains the following chapters:

- An introduction to the AIIC organization
- Governance and management
- Stakeholder relationship and services
- Facilities management
- Human resource management
- Financial management and administration

The incubator management's relevant SOP documents have been provided by ABI-ICRISAT in a generic format that was subsequently adjusted to the local context by the incubators. One of

Box 6.1 Recommendations regarding collaboration with external partners

- Up-scale the partnerships with other stakeholders with similar interests
- Engage the community
- Involve the government, because they have certain policies that can make the implementation of business incubators easier
- Lobby for local government support
- Establish partnership with financial institutions, with well-defined goals
- Form partnerships with private sector organizations
- Leverage industry associations and partner networks
- Collaborate with previous project partners to develop incubation projects
- Always look for funding opportunities and rely on networks to help you
- Network with other organizations and incubators where you can co-create knowledge together
- Engage all necessary public and private institutions for access to processing equipment and other services such as products quality testing
- Make partnerships with other organizations that provide incubation services
- Timely and sufficient communications with stakeholders is essential to gain their support
- Visit other incubators to learn and exchange programs and to benchmark your business incubator

(Source: Unibrain lessons learned survey)

these documents is the AIIC's Incubation Programme Manual. Box 6.2 shows the typical content of this document.

The interviewees and survey respondents recommend establishing policies and guidelines for the management team during the formative stage of the incubator establishment, including general operations, financial management, incubator selection, incubation, monitoring and evaluation. More specifically it is recommended to ensure:

- Structured or systematic business operations
- Policies and guidelines for the incubator
- Clear and well-defined selection criteria for the incubatees
- Well-defined incubation processes
- A strong financial management system, i.e. clear guidelines for financial setup
- Have guidelines on gender to attract more female incubates
- Monitoring & evaluation framework for accountability, information and communication sharing, and peer learning

Box 6.2 Incubation programme manual content

- Candidate information & procedures
- Incubator admissions process
 - Pre-incubation procedures
 - Pre-incubation selection criteria
 - Business incubation procedures
 - Business incubation selection criteria
- Business incubation graduation/exit criteria
- Client graduation/exit procedures
- WAARI incubation programme
- Incubation business training & support services
- Incubation tenancy
- Pre-incubation application form
- Business incubation application form

(Source: WARRI Handbook II)

In relation to the financial management systems, the UniBRAIN project document identifies the following aspects that must be addressed:

- Roles and responsibilities
- Planning and budgeting
- Reporting
- Accounting, audit systems and policies
- Receipts and payments
- Asset management (bank, cash, and advances)
- Fixed assets
- Payrolls
- Procurement
- Financial statements close process
- External audit

However, rules and regulations do not in itself ensure effective and efficient management. An AIIC CEO reminded us that “*open communication between partners, board and management is important for streamlined and efficient operations.*”

The AIICs' achieved most of the goals identified in the UniBRAIN project document. When participants were asked what could have enhanced managerial effectiveness they mention: avoiding unnecessary bureaucracy; larger portion of the grant released faster (to initiate fixed assets acquisition early on in the programme); only engage with a manageable number of

incubatees; stick to the business model and do not be overambitious; and make sure that the AIIC's staff is knowledgeable about incubation.

A central element in ensuring operational efficiency is the AIIC staff. The staffing of an incubator is highly dependent on the financial scope of the operation. In the UniBRAIN programme, the funding provided enabled AIICs to employ a significant number of employees (5-7 persons). The AIICs' staff typically consisted of professionals in job categories such as: food technologist, product development officer, market development officer, client development officer, financial officer/accountant, investment analyst, administrative officer, receptionist and driver. UniBRAIN reviews have observed a tendency to over-staff the AIICs. In less well-funded incubator projects it is recommended to focus on obtaining an incubator CEO with the necessary experience and skills to tap into the local resources to obtain specific inputs needed in the service provision. We will return to some excellent examples of how this can be done in Section 6.3 on resource orchestration.

In relation to staff characteristics, the interviewees and survey respondents recommend ensuring that:

- Staff members, and as a minimum the CEO, have incubation management experience
- The staff have knowledge of the value chains targeted
- The staff constitute a cohesive team
- Adequate training is provided at all levels
- Sharing of best practices is facilitated among staff members

The number of professionals in the African setting that has been involved in incubator operations, either as incubator staff or as incubatee is very limited. The staffing of CEO positions in the AIICs has been challenging and, for different reasons several of the AIICs have had a high turnover rate of CEOs during the initial years. Finding the right CEO is a very important process and it is recommended that incubators spend the necessary resources and time to ensure the right match between the employee and the job description.

6.3 Resource Orchestration

Resource orchestration theory provides a useful framework for discussing important competences needed by incubator managers and staff. Resource orchestration explains how organizations search and obtain different resources (knowledge, physical inputs, funding, etc.), how they configure or combine these resources into activities and products that enable the incubator to deliver services, and finally, how these services and products are used to achieve the incubator's objectives.

All AIIC CEOs engage in resource orchestration in relation to different dimensions of the incubator activities. For example, CURAD organizes an annual entrepreneurship competition sponsored by private enterprises and public agencies. Banks and a mobile phone company provide the competition prizes and finance the actual event. Moreover, different companies who sponsor the competition provide pre-competition business development training and mentorship for shortlisted participants. Only the five best start-ups win cash prizes, but after the competition the 10 highest ranked start-ups enter CURAD's incubation/acceleration programme where employees from the sponsoring companies provide part of the mentoring and training. The CURAD

university partner provides the training facility for the programme. This way CURAD is able to organize an incubation process of 10-15 start-ups per year entirely sponsored by its business network.

At AgBIT, the incubator collaborates with a vegetables seed producer who provides free seeds to the incubator. The seeds are used in the AgBIT production facility for training incubatees in vegetables production. The production is partly carried out in a greenhouse made available by a greenhouse producer. The two companies use the relationship with AgBIT as a way of promoting their produce, for example, at vegetables fairs held at AgBIT. AgBIT obtains production input and income from selling the produced vegetables.

The two examples show how creative incubators are able to obtain resources, for example, business knowledge, production input and start-up funding from various sources, for example, AIIC partners, private companies and government agencies. The incubators combine these into services such as entrepreneurship competitions, business development service and training programmes, to achieve their objectives in relation to start-up support and incubatee training. Especially in resource constrained organizations it becomes extremely important to perform efficient resource orchestration to minimize costs and maximise the range of services provided by the incubators.

6.4 Products and Services

In Section 5.7 we discussed the income generation opportunities outlined in the AIIC business models and the importance perceived by AIIC CEOs of the different revenue generating activities. Theoretically, the scope of the services that the university-business-research tripartite partnerships can provide is very broad. Table 6.2 provides an overview of generic customer types and related services identified in the AIIC business models.

Table 6.2 Generic customer categories and services (source: AIICs Revised Business Plans, 2013).

Customer type	Provided service
University students	Earn as You Learn (EAYL) incubation programme
Graduate start-ups	Mentoring, coaching, business planning
More experienced start-ups	Mentoring, coaching, business planning
Expanding firms	Partnership and networking
Diversifying firms	Technology transfer and access services
Firms seeking new markets	Market intelligence, market analysis
Faculty	Hands-on experience internships, business advice on curricular, successful role models
Development agencies and NGOs	Incubation components in agricultural development projects

As discussed in Section 5.7.1, the range of services outlined in the AIIC business plans tends to be all-encompassing. In theory, the AIICs are aimed at developing services for students, young entrepreneurs, SMEs, larger domestic firms and foreign companies entering local markets.

In addition to the more business development-oriented activities, the AIICs due to their agribusiness education engagement and objective of producing graduates fit to be agribusiness

leaders also contributed to improving the quality of agribusiness graduates produced by their university and college partners. Typically these activities included:

- Exposing lecturers to the real world of agribusiness
- Helping improve curricula contextual relevance
- Creating opportunities for internships and work experience
- Being a source of visiting lecturers and role models
- Collaborating in Earn as You Learn programmes to enable university students to found their own agribusinesses while still studying

It seems that especially the internship activities have been successful. All AIICs have had internship programmes. Some interns have been interns at the AIIC administration and others have been placed at the incubatees' start-ups. The interviewed interns express that they have obtained valuable experience from being part of a professional environment and from gaining insight into practical agribusiness management.

An important area of activities is related to “commercialization of technology”. This area includes activities such as:

- Pitching competitions
- Developing business models
- Sourcing start-up capital
- Providing affordable workspaces and offices
- Sharing of equipment while incubatees' production volumes are too low to afford their own
- Providing access to shared services such as accounting and auditing
- Technical advice
- Customer and market development and sourcing markets
- Networking with potential suppliers and customers
- Access to competent and motivated mentors

UniBRAIN has issued catalogues of technologies across various agribusiness value chains with brief descriptions of exemplary business models. Some of these technologies are promoted by universities and research organizations and some by other stakeholders. ABP has been focused on a limited number of technologies, promoted by so-called ‘technology holders’, who constitute the primary partners in ABP. The technology holders are entrepreneurs with products such as vacuum sealed matooke banana, banana fibre products, charcoal briquettes, and biodegradable bags. Typically, the incubatees are young university graduates who have primarily undergone a 9-month training programme focused on vocational training in the chosen technology area before they initiate an actual business establishment phase.

Most of the technologies promoted by the UniBRAIN AIICs are relatively low tech products or services. Although funding is provided by the AIICs for the incubated start-ups, the level of funding is relatively low, typically ranking from USD 500 to 10,000. This alone limits the scope of technology innovation. A very limited number of the start-ups seem to be based on technologies that are entirely new and have previously ‘remained on the shelves of the research institutes’, but some good examples do exist. At CCLEAR the incubator in collaboration with CSIR-Animal

Research Institute has been able to use existing research on grasscutters¹⁰⁴ to develop farming system concepts that are promoted as standard ‘starting-kits’ for farmers interested in entering the grasscutter meat value chain. The incubator provides the farmer with production equipment, practical advice on production and marketing and contacts to traders. Grasscutter production is not unknown, but no coordinated value chain exists. CCLEAR also aims to contribute to the developing of a more integrated and industrialized value chain by linking an increasing number of producers to the established livestock butcher and abattoir sector.

Several interviewees emphasize that (novel) technology commercialization is a complex, highly specialized, risky and expensive process. One agricultural research organization who was a partner of an AIIC remarked that their innovations primarily consisted of new cereal varieties and that the right partners to commercialize such innovations are large seed companies with the necessary experience in marketing and the required marketing channels for exploiting the final seed product. Minimizing the market risk is important because the research institution is partly funded by royalty income from their technologies IPR and engaging with the AIIC is not a realistic option. On the other hand, the Kenyan Agricultural and Livestock Research Organization (KALRO), a partner in SVCDC, was successful in extending their sorghum research and breeding programme through incubation of farmers as seed-growers. By providing new seed varieties, technical support and by linking farmers to seed processors and traders, KALRO plays a central role in the innovation process that enables SVCDC to support business development among small-scale farmers and seed processors. KALRO’s mission is to ensure diffusion of new varieties to small-scale farmers and collaborating with SVCDC provides a previous non-existing platform for reaching this objective. These two examples illustrate not only the ability of an AIIC to leverage on partners’ new technologies and resources, but also the importance of identifying partners’ interests and designing services that contribute to both the partners’ objectives. In general, AIIC CEOs argue that the process of maturing new technologies for the market is costly and time consuming and *“incubators need additional funding possibilities and better engagement with the private sector in order to successfully commercialize ‘on-shelf’ innovations.”*

In terms of customer categories served, established farmers constitute the largest group. The services provided have mainly been related to knowledge transfer and training aimed at increasing production, enhancing product quality, and marketing final product. CURAD in collaboration with its partner NUCAFE has serviced coffee farmers; SVCDC in collaboration with its partners KALRO and FASI has serviced sorghum seed producers; and CCLEAR in collaboration with its partners CSIR-Animal Research Institute and Heifer International have supported grasscutter and livestock farmers.

Although this type of holistic service provision integrating farming extension, business development and marketing linkages may be a deviation from the pure business incubation model,

¹⁰⁴ The greater cane rat (*Thryonomys swinderianus*), or grasscutter as it is called in Ghana, is a wild animal species who has been domesticated.

it seems to have a potential as a sustainable revenue stream. For example, CCLEAR has generated significant revenues from providing this type of services through publicly funded development programmes¹⁰⁵ and SVCDC is collaborating with an NGO in order to supply a business development component a small-scale farmer development project in collaboration with the NGO Farm Africa¹⁰⁶.

Beyond farmers, the number of existing SMEs that have received services through the AIICs seems limited. Several AIIC CEOs emphasize that SMEs are unwilling to pay for services. The interviewed SMEs acknowledge the support provided, but argue that they especially seek funding, and the AIICs have not been able to provide funding at a significant level. In terms of service provision and business engagements with larger companies and corporates the experiences also indicates that this is a difficult market to enter. One of the foreseen revenue streams was that the AIICs should be able to source contracts from companies needing expert advice and then staff these contracts with members from, for example, the TAC. This resamples a classic consultancy business model which is often associated with very slim revenue margins. Operating such a consultancy-based business model requires a good track record and reputation which takes time to establish. The length of the *de facto* operational period of the AIICs has been too short to verify if such a business model is viable or not.

Most AIICs have collaborated with non-governmental organizations or community-based organizations. In addition to the above-mentioned examples from CCLEAR and SVCDC, AgBIT has engaged in a project with DFID aimed at establishing farmer producer organizations and organizing rural vegetable supply chain hubs that provides enhanced post-harvest management including quality control and storage facilities. ABP have incubated banana producer groups to enhance production methods and to ensure sourcing of input for its banana-based business areas.

Some of the incubators have implemented Earn as You Learn (EAYL) programmes. At CURAD, the EAYL programme enables students to establish a business while they are studying. In the EAYL programme CURAD provides university students with practical know how, training programmes, guest lectures, business dialogues and networks with industry stakeholders, access to infrastructure, land, and funding. CURAD's partner Makerere University leases out production plots to students enrolled in the programme in which they establish different kinds of agricultural ventures. Answers in the lessons learned survey indicate that the EAYL model is appreciated by university students and can provide income for the AIIC and its partners, but also that it is important to:

- Ensure the student incubatees' engagement by requiring co-funding of input costs

¹⁰⁵ For example, in order to promote business in the pig industry CCLEAR implemented a pig agribusiness project called "Creating Competitive Entrepreneurs in the Pig Value Chain in the Greater Accra Region of Ghana" with sponsorship from the Skills Development Fund Ghana under the Council for Technical and Vocational Education and Training.

¹⁰⁶ Farm Africa is a European NGO specialising in growing agriculture, protecting the environment and developing businesses in rural Africa. See: www.farmafrica.org.

- Ensure adequate monitoring and supervision of the EAYL incubatees and their operations
- Adequately manage agricultural production risks
- Ensure that applicants have some prior knowledge of the production type

In the following section we will address the business incubation process and the main services provided by the AIICs.

6.5 Incubation

The AIICs' provide business incubation to several types of incubatees, including farmers and farmer groups, university students and graduates who individually or in teams engage in a business start-up, or to established companies that want to accelerate their growth. The incubation process typically consists of 1) a selection process where the incubatees are selected among a group of applicants, 2) the actual incubation process where incubatees are supported with a range of services to help them grow their venture, and 3) the incubatees' graduation out of the incubator and subsequent post-incubation support.

6.5.1 The Selection Process

The incubatee selection has been a learning process for all AIICs. In general, the literature emphasises that the quality of incubatees is crucial for the success of the incubator. This is emphasized by the AIIC CEOs, and several argue that they have been too inclusive and that they will be more critical in future recruitment. The AIICs' initial selection processes were discussed during a UniBRAIN Partnership meeting in 2013 based on a mapping of the initial process used in each AIIC. Figure 6.1 illustrates the mapping of AgBIT's process.

The maps were compared, and pros and cons discussed by the workshop participants. The main conclusions were that:

- Selection is a very resource demanding process
- Due diligence is needed to ensure that the selected candidates live up to their proclaimed capabilities and to verify claimed asset holdings. Visiting the incubatee premises is considered very important to obtain first hand impression of the incubatee and his or her start-up activities
- It is important to make sure that applicants are informed about the selection process and that their expectations are aligned with what the incubator can offer

By 2014, the revised business plans provided the following generic description of the steps in the selection process at all six AIICs:

- The entrepreneur contacts the incubator
- Discussion on what can be offered/availed
- A formal incubation proposal submission by the incubator
- An incubation application is elaborated by the entrepreneur
- The assessment is approved or rejected by a the AIIC's CEO and the BoD (selection criteria: soundness of the idea, competent team, market potential, resources availability, synergy)

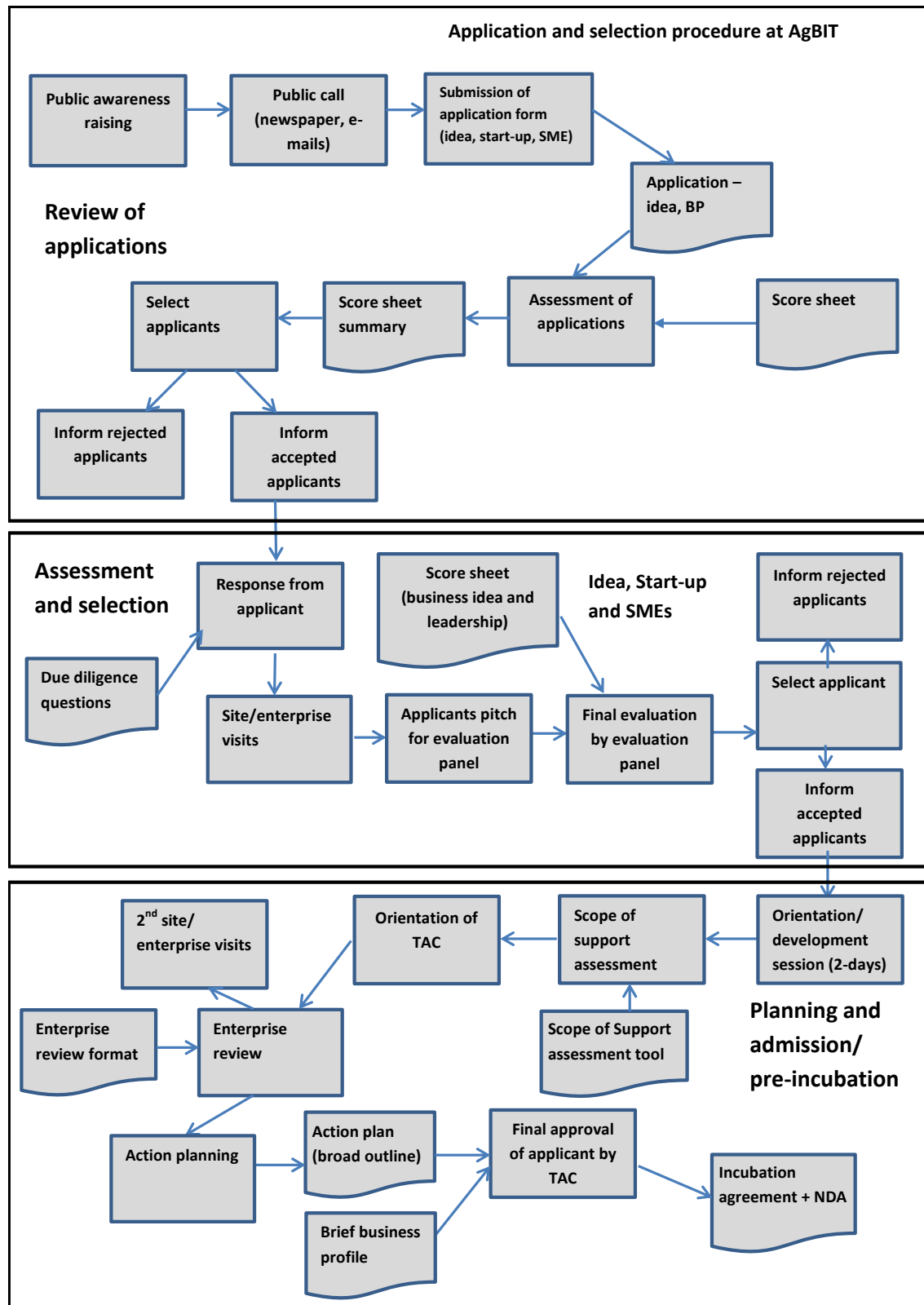


Figure 6.1. Process model of the incubatee selection process.

- If the application is approved, an MoU is prepared and signed by the entrepreneur and AIIC
- Enrolment of incubatee with payment of membership fee

This description of the process is very simplified compared to the actual procedures applied in the first incubatee enrolment round.

Box 6.3 shows a summary of the recommendations given by AIIC CEOs and lessons learned survey respondents. Many recommendations highlight the importance of selecting “*the right people*” and “*the right businesses*”. The right people are entrepreneurial, innovative, and ambitious and have some experience already, and the right businesses have a potential to become revenue sources for the incubator. The selection is time consuming and as one respondent argued: “*We did not devote enough time to identify important*

entrepreneurial characteristics of our potential incubatees and other stakeholders that would have strengthened our sustainability strategy.” An AIIC CEO argues that it is important to “*choose resource rich entrepreneurs that can sustain themselves through the start-up phase and do not need a grant to survive.*” If the incubatees are not in a position to financially sustain themselves they may be unable to focus on growing their start-up.

The AIICs were very instrumental in reaching the number of incubatees planned according to the UniBRAIN programme document. It is evident from the reviewed Partnership meeting discussions that achieving the goals stipulated in the original programme document was considered highly important. In addition, the AIICs focused on recruiting graduate students, i.e., unexperienced entrepreneurs which is also in accordance with the programme’s objectives. A CEO explained that this was problematic because the success rate is low with this type of incubatees. He argued that “*for better success of business incubation, it is important to work with incubatees who already identify as entrepreneurs*”. The AIIC should focus more on experienced start-ups and SMEs, i.e., engaging less in incubation and more in business acceleration targeting the more mature start-ups with an established product and verified market potential.

Several AIICs mention that they need to strengthen their recruitment process and competitive selection is emphasized as well as thorough evaluation of applicants. At CURAD and AgBIT the selection process was combined with an externally funded entrepreneurship competition. This ensured broad exposure of the event and the involvement of experienced business people in the selection process. A different strategy recommended by some AIICs is that “*the incubator team should be on the lookout for potential incubates.*” Moreover, one of the CEOs recommend that

Box 6.3 Incubatee selection

- Proper incubatee selection is necessary to ensure revenue generation for the incubator
- Ensure proper guidelines, policies and procedures for the incubatee recruitment process
- The intentions and objectives of the project should be made clear to the stakeholders as early as possible in the process, so that they do not get disappointed
- A rigorous selection process is important for selection of incubatees which includes doing due diligence on-site
- The incubator need to be stringent in selecting people who are ambitions in pursuing innovation and entrepreneurship
- The incubator team should pro-actively identify potentially successful incubates
- Start with smaller numbers of incubatees and scale up when you have become more experienced
- A few well-elected incubatees will result in higher impact (maximum 20 start-ups per year)
- Incubatees should be given a ‘probation period’ of 3 month because in that time they should be able to show progress

(Source: Unibrain lessons learned survey)

“the number of inexperienced start-ups should be minimized as they take long to get into the system.”

The recommendations also highlight the importance of clear and transparent selection criteria and procedures. Moreover, the previously identified need to ensure that applicants are properly informed about what they can expect from the incubator is still relevant. In the interviews with graduate and SME incubatees the lack of supervision provided by the incubator staff was a recurring topic. This issue is likely to relate to the following observation made by an AIIC CEO *“We recruited a large number of incubates which we could not handle sufficiently.”* It seems to have been a tendency in most AIICs to recruit too many incubatees in the initial enrolment and several CEOs recommend starting with fewer incubatees and expanding the number of incubatees once experiences have been gained regarding the resources and knowledge required for successful business development support.

An interesting collaboration was established between SVCDC and the NGO *Scopeinsight*¹⁰⁷. *Scopeinsight* has developed a tool for assessing the creditworthiness of farmers, SMEs and farmer cooperatives and producer groups. The tool is developed based on the questions asked by finance institutes, and addresses the challenge that small businesses often have no records with which to document their potential. Adopting such an independent and professional assessment tool is an interesting way of improving the incubatee recruitment process.

6.5.2 The Incubation Process

6.5.2.1 Incubation Activities

The six AIICs' incubation processes largely include the same elements. Table 6.3 shows CURAD's business incubation programme including a pre-incubation phase, the actual incubation phase and a post-incubation phase.

¹⁰⁷ See: <http://www.scopeinsight.com/>.

Table 6.3 Description of CURAD's business incubation programme.

Pre-incubation phase	Incubation phase	Post incubation /exit/ graduation
<p>In this phase the client is advised on the gaps in the business model as presented and supported in such a way that the client will be ready for the incubation programme in a predetermined time frame. The incubator engagement here would be very passive at this level with a client being invited to participate in the incubator activities. The following are some of the issues considered at pre-incubation phase.</p> <p><i>Activities include:</i></p> <ul style="list-style-type: none"> • Personal SWOT analysis • Personal objectives • Deciding the legal structure of the start-up • Business plans • Selection of incubatee 	<p>At this stage the incubatee is admitted to the incubator with clear work plans and budgets of the things that will be covered. The parties thereto will agree on the role of each during the incubation period. The following are some of the key activities during incubation</p> <p><i>Activities include:</i></p> <ul style="list-style-type: none"> • Development of a marketing strategy • Product development strategy • Leadership skills development • Business model validation and strengthening • Exit strategy development • Staff and management development • Financing • Signing memorandum of understanding • Monthly monitoring and reporting • Quarterly site re-visit and reporting • Business support services 	<p>The incubator is designed to help launch new ventures which will typically graduate into two or three years on the completion of the engagement contract. However companies will spend varied time in the incubator depending on their needs.</p> <p><i>Activities include:</i></p> <ul style="list-style-type: none"> • After care services • Exit strategy

Table 6.4 shows AgBIT's three-phased incubation process consisting of a start-up, a growth, and high growth phase. This process is slightly different from CURAD's in that the post incubation is replaced by a high-growth phase with extended involvement of the AIIC.

The incubation model at ABP is somewhat different from the models in the other AIICs. At ABP the large majority of the incubatees are engaged in production and marketing of one of the six technologies¹⁰⁸ that are promoted by the incubator. After enrolment in ABP, the incubatee will be allocated to a dedicated training workshop and receive technical training in the chosen technology. The training workshop will be provided with the necessary inputs trained in the production processes. After a period of six to nine month of technical training the incubatees will enter the business development stage where business development training is provided to support the incubatee in developing his or her own start-up based on the chosen technology. Subsequently, the incubatee will continue using the technology centre's production facilities and enter a revenue sharing agreement with ABI. Thus, compared with the other UniBRAIN incubators, the ABI model has a substantial element of vocational training as a foundation for the business incubation process.

¹⁰⁸ The six technologies promoted by ABP are freshly peeled and vacuum sealed bananas, banana vinegar and wine, biogas, charcoal briquettes, biodegradable bags and textile fibre materials.

Table 6.4 Description of AgBIT's business incubation programme.

AgBIT's business incubation programme consists of an array of client-tailored support services provided to entrepreneurs and start-ups with the most innovative business models, to nurture them to growth. The incubation programme takes from three months to about a year depending on client category and their specific needs.

The process starts with a review of the entrepreneur's business application, through to due diligence, pre-incubation, incubation and post-incubation support. AgBIT incubatees are categorized into three phases (P1 through P3) and provided with specifically tailored support as listed below. P1 business incubation is a three-month cycle, currently taking in 9 to 12 incubatees per month, with successful incubatees having the opportunity to be admitted to the P2 phase.

Start-up/seed phase (P1)	Growth phase (P2)	High growth phase (P3)
<ul style="list-style-type: none"> • Regulatory compliance support • Financial management • Business plan development • Market assessment and validation • Management capacity building • Mentoring and coaching • Product development • Plant layout design and technology assessment • Branding and marketing support • Registration with the public authorities 	<ul style="list-style-type: none"> • IP protection and management • Brand development • Marketing services • Negotiated group BDS services (auditing, management accounts, tax, branding, etc.) • Equipment/technology sourcing • Additional management capacity building • Additional mentorship and coaching • Advisory board • Seed fund/fund sourcing 	<ul style="list-style-type: none"> • Advisory board • Fund sourcing • Identification of investment partners/JV partners • New product development

6.5.2.2 Incubatee-Incubator Relationship

An important aspect of the incubation process is the incubatee-incubator relationship. With regard to this relationship, the incubatees' responses in the lessons learned survey highlight the importance of:

- Finding out what the incubatees' problems are through regular visits and interactions
- Conducting regular meetings with and follow up on incubatees
- Making a constant supervision programme to help incubators iron out any errors they made
- Monitoring EAYL incubatees more intensively
- Incubators managing the incubatee's production and marketing activities for better returns
- Helping students discover the business ideas that would best suit them
- Improving the communication from the incubator to the incubatees
- Working critically with the incubatee to identify key areas that requires innovation
- Questioning the incubatees about what benefits they have got out of the incubation program

Some of these recommendations indicate that incubatees have high expectations regarding the level of interaction and that some have been disappointed about the experienced level. Several AIICs remark that incubatees' expectations are high, and that they may easily be disappointed. The following quote from an AIIC CEO may point to part of the explanation: *"Incubatees have too many expectations. They think that the incubator is not a business entity but a NGO."*

However, lack of the necessary resources and tools to manage the interaction were also mentioned as part of the explanation.

In general, it is problematic if the key customers are not satisfied with the service provided. The main recommendations regarding this situation seem to be, on the one hand, to ensure professional service provision, and on the other hand, to ensure a clear alignment of mutual expectations. AIIC staff recommends that this includes assuring a clear understanding of:

- Which services can be expected and which cannot
- Which criteria the incubatee needs to meet to stay in the programme (e.g., clear engagement and progress)
- How long time the incubatee can expect to be enrolled in the programme

Part of the incubator-incubatee relation is related to the incubator's need to monitor the progress of the incubatees. The incubator needs to demonstrate progress to its external stakeholders, for example, sponsors, but the monitoring is just as much a means of addressing problems that the start-up may confront and engage proactively in joint problem solving.

The incubator's M&E activities should aim to support a mutual learning process. A 'customer-oriented' approach that allows incubatees to share their experiences with the incubator and to express how satisfied they are with the provided services will enable the incubator to align its processes with the needs of the incubatees and thereby be able to better attract the most promising incubatees. It is therefore recommended to establish formal feedback mechanisms that facilitate incubatees' evaluation of the incubator's performance.

6.5.3 The Incubation Services Provided

6.5.3.1 The Service Mix

The components in the AIICs' incubation service mix outlined in the business plans from 2013 are presented in Table 6.5. With minor variations, the five AIICs offer the same services. It is interesting to notice that only two AIICs explicitly mention provision of mentorship as a service.

Table 6.6 lists the kind of services that respondents mentioned in the lessons learned survey and the table shows the distribution of comments to the 'worked well', 'was a challenge', and 'recommendations' categories. It is clear that the provision of training, mentorship, networking support, provision of equipment, and marketing support was important services and they have been highly appreciated by the incubatees. Marketing support, funding, provision of equipment, training, and certification are the main areas associated with challenges.

Table 6.5 Incubation services offered by the six UniBRAIN AIICs based on the description in the revised business plans from 2013.

Client services offered	ABP	AgBIT	CCEAR	CURAD	SCVDC	WAARI
Office space	X			X	X	
Access to the combined human and infrastructural resources of the consortium/institutional facilities		X	X	X	X	X
Market development/market research studies/marketing support	X	X	X	X	X	X
Pilot plant facilities/access to processing facilities at the AIIC	X	X	X	X	X	X
Technology licensing	X	X		X	X	X
Scientific/technical support for product development/testing lab/QC	X	X	X	X	X	X
Preparation of bankable project reports	X		X	X	X	
Business plan development		X	X			X
Techno-economic feasibility studies	X			X	X	
Field and farmers survey	X			X	X	
Networking with industries	X		X	X	X	
Funding assistance through banks and VCs	X		X	X	X	X
Intellectual property rights support – patenting, copyright	X			X	X	X
Legal support – company formation, legal clearances information	X			X	X	X
Access to library and institutional facilities on payment basis	X	X		X	X	X
Free participation in the AIIC's exhibit stalls on agricultural fairs	X	X		X	X	X
AIIC ID Cards	X	X		X	X	X
Promotion and publicity in website and other materials	X	X		X	X	X
Institutional linkages	X	X		X	X	
Consultancy		X				X
Mentoring		X				X
Peer-to-peer learning					X	
Training			X			X

From Table 6.6 we can see that the respondents' comments have primarily addressed the following services listed in order of importance with 'Funding' topping the list with 49 entries¹⁰⁹:

- Funding
- Training of incubatees
- Marketing support
- Provision of equipment
- Mentorship
- Networking
- Technology transfer and technical training
- Access to work space and production facilities

¹⁰⁹ The number does not necessarily equal the number of persons having mentioned the topic since the same person may have entered a service more than once in the survey.

The list seems to be a good indication of what matters most in agribusiness incubation. It is interesting to compare Table 6.5 and 6.6 with regard to the services that received the most attention in the lessons learned survey. ‘Marketing’, ‘Networking’ and ‘Access to work space and production facilities’ were all parts of the AIIC business plans. ‘Funding’ is also mentioned in the business plans and refers to bank or venture capital, whereas the recommendations in the survey responses mainly refer to funding provided by the AIIC. ‘Mentoring’ is mentioned by one business plan but attract significant attention in the survey. It seems that the importance of mentorship was not necessarily recognized in the business plans. This may relate to the fact that a UniBRAIN programme partners was assigned with the task of engaging mentors for the AIICs. But the survey clearly shows that mentorship is an important service that AIICs should aim to control themselves. ‘Provision of equipment’ is interesting because it is not at all mentioned in the AIICs’ business plans. ‘Technology transfer and technical support’ is not explicitly mentioned but technical support may be implicit in some of the business plan categories. ‘Training of incubatees’ is only explicitly mentioned by one AIIC business plan.

The differences between the two lists and the absence in the survey of a number of the services listed in the business plans may indicate that AIIC should simply focus on the core services of an incubator during the initial establishment phase and become efficient in delivering the core incubation product before expanding to more specialized services. In the following paragraph we summarize the recommendations made by the AIICs and lessons learned survey respondents regarding the above eight core service categories.

Table 6.6 Number of times client services were mentioned in the lessons learned survey.

Client services identified in the lessons learned survey	Worked well	Challenges	Recommendations
Product certification	2	5	8
Commercialization	1	-	-
EAYL	3	2	5
Exposure in exhibitions and workshops	9	1	6
Funding	7	18	24
Provision of knowledge and information	2	-	2
Marketing support	16	18	10
Provision of mentorship	23	4	9
Needs assessment	2	-	4
Networking support	22	-	11
Product development support	3	2	1
Identification of business opportunities for incubatees	1	-	7
Provision of equipment	19	15	9
Provision of materials	3	4	4
Support to establish start-up team	2	-	1
Technology transfer and technical support	17	3	9
Training of incubatees	30	6	13
Access to work space and production facilities at the AIIC	4	11	9

Box 6.4 Funding support

- Delivery of business incubation services needs to be supported with financing to SMEs to be sustainable
- Mobilizing resources (directly or through private sector partnerships) to capitalize supported incubatees is critical
- Develop an access-to-finance strategy that focuses on either informal sources or special schemes in the formal institutions
- Cost sharing with incubates is needed to reduce the risk and increase ownership of projects
- Phased disbursement of the support is critical
- Transparency in support for incubatees should be encouraged and promoted
- The university patrons / deans should co-sign with EAYL incubatees on the incubatee agreements to strengthen the incubatees' commitment to pay back the received funding
- The incubator should introduce SACCOs for incubatees where they can access simple loans with a small interest to help them in boosting their businesses
- Ensure crop risk insurance for all start-up

(Source: Unibrain lessons learned survey)

6.5.3.2 Start-Up Funding

Funding is a critical element in developing the start-up. Many of the interviewed incubatees explained that they had products ready for commercial upscaling, but lacked the funding to establish the needed production capacity. The UniBRAIN programme did not initially operate with a credit facility for incubatees. 'Funding assistance through banks and venture capitalists' was mentioned as a service, but very few examples have been encountered during the lessons learned study of incubatees that were successful in achieving this type of funding. One exception is in CURAD where part of the winning prizes in their start-up competition was access to loans provided by a bank co-sponsoring the event.

The prospects of obtaining funding attracted many incubatees and other clients to the AIICs. But as one respondent argued "*many potential incubatees lose interest when they realize that the incubator cannot provide*

financial benefits." In the interviews with incubatees, lack of or insufficient funding was the most significant reason for dissatisfaction with the incubation programmes. There seemed to have been a widespread expectation that the AIICs would be funding the incubatees and many of the recommendations state that the AIICs should provide capital or loans, for example, as expressed in this recommendation "*investment support must be timely to encourage and uphold interests of clients*" given in the lessons learned survey.

In practice, the AIICs supported incubatees with small-scale grants or loans. The AIICs' intention was to establish a revolving fund where the interests payed on loans given to the incubatees would allow the AIIC to maintain or even increase a working capital used to support new incubatees through loan. The ability to provide funding was recognized by AIICs as important for recruitment: "*The ability to offer bootstrap support gave some confidence to incubatees so they kept coming to us.*" But as argued by an AIIC CEO, there are "*challenges in revolving funds management due to the risky nature of start-up funding support. This has to be taken into account in the operations and buffered by partner support or grant funding.*"

Concerning the administration of loans to incubatees it is recommended that loans are given based on a professional assessment of the incubatees 'project'. The experience is that incubatees often need less funding than they think. It is recommended to identify bootstrapping financing strategies with incubatees to minimize their capital requirements. AIICs should team up with banking or other finance professional to develop clear and transparent assessment approaches to support the AIICs' decision making processes. SVCDC's engagement with the NGO *Scopeinsight* described

in Section 6.5.1 is a good example of this. AIIC CEOs also recommend that loans are provided on ‘matching loan’ conditions where the incubatee’s own capital investment is matched with a loan. Moreover, loans should be given on a phase-basis where intermediate milestones have to be achieved before the next portion of the loan is released.

Table 6.7 provides an overview of the funding sources accessed by incubatees and SMEs in the six AIICs. The overview shows that funding is available if the business is promising or has already documented some viability.

Table 6.7 Number of incubatees that have obtained funding from different source.

Sources of funding	ABP	AgBIT	CCLEAR	CURAD	SVCDC
Family and friends			NA	70	
Angel investors		2	NA		
Venture capitalist investment			NA		1
Private equity investors		1	NA		1
Bank loans	3	1	NA	5	4
Small business loan	6	6	NA	10	6
Crowdfunding			NA		
Government grants			NA		
Development agencies	2	1	NA	5	4
Incubator financing facility (loan)		11	NA	40	15

AIIC CEOs recommend that an explicit incubatee funding strategy and ideally a funding scheme are established as part of the incubator establishment process. One potential option for bootstrap funding is to facilitate the establishment of a user-owned Savings and Credit Cooperative Organization (SACCO). Collaboration with banks is another possibility, but in practice this has shown to be very difficult to achieve. Some AIICs have been able to link their incubatees to other public or private business support programmes that provide loans or grants.

6.5.3.3 Training and Business Development

Training of the incubatees is an essential element of the incubation process. Box 6.5 shows the training areas recommended in the lessons learned survey.

The list shows that the training needs both address technical and business related issues. Some AIICs emphasise the technical training before engaging in business development. In this model the challenge may be to strike the right balance between technological training and business development and to ensure flexibility that enables the individual incubatee to progress with his or her venture creation process at a satisfactory pace.

The training can take place in several ways. In many cases training is done through

Box 6.5 Training

- General entrepreneurial skills
- Business skills
- How to run a business
- Business development
- Book keeping and accounting
- Credit management
- Proposal writing for fund seeking
- Understanding intellectual property rights
- Specific production processes
- Packaging materials and technologies
- Agribusiness innovation
- Technology commercialization

(Source: Unibrain lessons learned survey)

seminars and workshops. But respondents also recommend relying on field exposure taking incubatees to already established companies for exposure to operation in the same sector.

It is important to find the right balance between formal education and training and informal contextualized (on-the-job) learning. Incubation is based on ‘learning-by-doing’ while working in one’s own start-up, and learning is more effective when related to concrete problem solving of relevance to the learner. The incubators need to identify where programmed teaching is relevant and when individual coaching and supervision is more appropriate for facilitating the entrepreneurial process.

How the AIICs’ training can be organized also depends on availability of in-house competencies. In some cases the training activities was conducted by external consultants and then a formal course format may be the most practical. But research shows that this kind of training is very inefficient compared to on-the-job training where the new knowledge is obtained when the need arises and immediately brought to use. The latter approach requires the presence of a qualified and experienced incubator staff that can supervise the incubatees on an ongoing basis. A good example is provided by an AIIC CEO: *“When we give financial support to the incubatee, we train the incubatees in credit management in a practical informal setting which prepares them for access to credit from a formal setting later on.”*

The training has been conducted by incubator staff; by TAC members from the AIIC partners, for example, business partners training in business plan development; by external consultants facilitated by UniBRAIN programme partners, for example, ANAFE and PanAAC; by other partners in the entrepreneurial ecosystem, for example, when private firms sponsor a entrepreneurship competition and provide business development supervision on a *pro bono* basis; and by former incubatees who have become experts in certain production processes.

6.5.3.4 Product Development and Marketing Support

The experiences with the provision of product development services are mixed. Some incubatees are very satisfied with the support provided whereas others argued that the AIIC was unable to support product development. In principle, the AIIC partnership may be able to support a range of product development issues, but in practice this process requires highly specialized knowledge that is difficult to access. It is recommended that incubators do not oversell their ability to support product development, and that they network to identify experts in the local ecosystem that are willing to support their start-ups. The small grants provided by the AIICs have been very important for incubatees’ ability to develop their produce for prototype development and testing in the market, for example.

Marketing support is one of the most important services offered according to survey respondents. Incubatees’ products have been marketed through agribusiness fairs and other events where the products have been exposed. In many cases, marketing of incubatees’ products are hampered by the lack of product certification by national bureaus of certification. This means that their products cannot access more formal supply chains and reach, for example, the growing number of supermarkets. As a response to this problem, the AIICs want to establish their own certified production facilities where incubatees can produce on a fee basis.

Leveraging on the credibility of their partners institutions, several of the AIICs have planned to establish own product labels or brands for collective marketing of incubatees’ and, in some case,

the incubator's own products. CCLEAR was successful in implementing this solution and has acquired a refrigerator van that is used for retailing of meat products in Accra.

Several of the lessons learned survey responses indicate that incubatees expect the incubator to be responsible of providing market for their products. This perception is problematic and unrealistic. Incubators are recommended to adjust incubatees' expectations and emphasize that a customer-first approach is needed. The incubatees need to be trained to become proactive in interacting with customers, both in relation to product development and marketing.

6.5.3.5 Provision of Materials and Equipment

"Incubatees need to be provided with enough machines and materials." This recommendation from an incubatee is representative for many comments from incubatees and SMEs in the lessons learned survey. The AIICs have supported incubatees to mechanize by purchasing machinery or to upgrade to more advanced and efficient technology. The provision of equipment has been based on loans, leasing or lending out the equipment to incubatees.

All the AIICs have planned to establish their own production facilities. For example, CURAD has established a coffee roasting and graining facility for processing of small batches. This facility is rented out to incubatees and SMEs and used for prototyping and product testing. CURAD is planning to establish a larger facility with a full food processing line that will facilitate the production of a number of different food products. At SVCDC, the university partner has been supported to install a bakery unit in connection to an existing food laboratory facility thereby enabling incubatees to engage in small-scale commercial production without investing in their own facilities.

It is clear that there has been a high expectation on the part of the incubatees that the AIICs would provide or facilitate materials and equipment as part of the incubation process. The targeted type of incubatees lacked basic resource to initiate their own production. With this target group, incubation programmes need to be designed to be able to provide such resources and most likely sustain the support over a longer period.

6.5.3.6 Mentoring

"Success of incubation lies in effective business mentorship." This conclusion by an AIIC CEO is generally recognized across the UniBRAIN incubators. The incubatees support this notion as illustrated with this representative statement: *"Business mentors have helped me much in how to run my business, interacting with customers/clients, how to add value to my products."* A mentor is defined as *"a person who gives a younger or less experienced person help and advice over a period of time."* In incubation, the mentor is supporting and advising the less experienced entrepreneur in how to develop his or her venture. Mentoring is based on one-to-one interaction aimed at enhancing the entrepreneur's skills, knowledge and performance.

The following statements from the lessons learned survey show some of the dimensions that mentors have supported:

- Experience within a particular agribusiness field
- Improving the day-to-day running of our business
- Business management
- Stock control
- Bookkeeping

- Helped me to get to know my customers
- Development of a business proposal
- Preparing good records leading us to make a good business plan
- How to continue running the production successfully

Although good experiences exist and some incubatees express great progress due to the mentoring they have received, the provision of mentorship to incubatees has been a challenge to the AIICs and in January 2015 three of the AIICs suspended the mentorship activities. The interviewed incubatees largely confirm the inadequacy of the mentorship provided across the AIICs.

In several cases, AIIC staff referred to lectures for a group of incubatees by an external consultant as ‘mentorship’. A PanAAC provided mentor, for example, provided training in better presentation skills, management of meetings and preparation of work plans. Although such training may be useful, the concept of using generalist consultant as mentors is problematic, and it is important that incubators acknowledge that mentorship is different from training and generic skills development.

The mentor-mentee relationship relies on an interest from both sides and on a long-term commitment. The mentorship is focused on the incubatee’s needs and questions. The mentor’s role is to ask tough questions and help find solutions to the incubatee’s questions, but the mentor should not tell the incubatee what to do. Through her connections, the mentor may also open important doors for the incubatees. Drawing on the mentor’s experiences and network can save time and avoid mistakes, but each start-up is different and has its own unique challenges which make a general theoretical solution less useful.

Founders or executives that have experienced being part of a start-up in a similar context as the incubatees are often considered the best mentors. Mentors should also have local connections relevant for the incubatees. Moreover, mentors should be role models for incubatees, which mean that incubatees’ should be able to identify with the mentors. Local people from the AIIC’s or incubatee’s own networks, whom they respect and who have the relevant expertise are more likely to help out than strangers. The idea of providing external mentorship, for example, through an international network like PanAAC is therefore questionable. A possible strategy would be that PanAAC and others support the AIICs in building their own mentor networks as well as train the incubator in how to establish and manage mentor-mentee relationships.

A recurring topic in the discussions with AIIC CEOs was the question of whether mentors should be paid for their services, or if they should be expected to engage voluntarily in the mentorship task. The general perception is that in the context of the UniBRAIN AIICs, unpaid mentorship is not realistic¹¹⁰. Traditionally, mentorship in business incubation is considered a *pro bono* service and mentors should not ask for payment. On the other hand, if mentors use a lot of time and contribute substantially to the venture’s development, start-ups might give them a small equity

¹¹⁰ This is the general perception among the private and public African business incubators interviewed. An exception is the private mixed incubator GrowthAfrica in Nairobi. Here *pro bono* mentorship is successfully organized.

share. The attractiveness of becoming a mentor is influenced by the benefits from being associated with the AIIC, so the AIIC partners should consider possible ways of incentivising mentors.

The more professional and successful the AIIC becomes, the more likely it is that voluntary mentors can be found. To overcome some of the practical challenges, an early stage incubator might rely on its institutional partners' professional and personal networks as well as internal mentors, such as staff members or anchor tenants and graduated incubatees.

Incubators should have clear mentorship guidelines and should verify that their mentors have the right professional approach to mentoring. Independent of what type of mentors are used, the AIIC should regularly evaluate the mentors' performance.

6.5.3.7 *Networking*

The AIICs have supported incubatees in networking in different ways. The types of networking activities that the lessons learned survey respondents recommend include:

- Incubators should organize for their incubatees that they can get in touch with other successful businesses, for example, they should organize agribusiness fairs, exhibitions, and workshops
- Recommend and link the incubatee to various funding and other service providers
- Organize workshop for exchange of technical know-how
- Enable incubatees to be exposed at conferences to allow them to create linkages
- Facilitate exchange visits at private companies and other incubators
- Facilitate linkages between incubatees and customers
- Facilitate interaction with fellow incubatees to foster sharing of experiences

Especially, the opportunities to participate in international events such as the African Agribusiness Forum Conference have been highly productive to the incubatees. Also national events have been valuable venues for marketing, seeing competitors' products and establishing new partnerships.

6.5.3.8 *Technology Transfer and Technical Training*

Technology transfer and technical training is a core element of the UniBRAIN model. The underlying rationale is that technologies are not efficiently diffused from the research organizations and universities where they are developed. By forming the tripartite partnerships, the UniBRAIN programme brings together the actors that can transform inventions into innovations and support diffusion through the ventures developed in the incubators. The UniBRAIN programme has developed a technology catalogue – Technologies for African Agri-business Development¹¹¹ – that contains more than 40 agriculture and agribusiness technologies. Moreover, WAARI partners

¹¹¹ Ariho, A., S.M. Karuppanchetty and R. Bhubesh Kumar (2014). Technologies for African Agri Business Development. ICRISAT, Patancheru, Telangana, India, pp. 118. ISBN 978-92-9066-561-8.

in collaboration with CORAF have developed a series of booklets introducing different agribusiness opportunities.

Lessons learned survey respondents stress the importance of ensuring “*accessibility of agricultural technologies to users, i.e., incubators, incubatees, start-up and SMEs.*” The developed technology publications facilitate knowledge about opportunities, but there is still some way to go from reading about a technology to getting into business. ABP’s model that focuses on relatively few technologies, in which incubatees get thorough training, is a different approach. It is recommended that incubators carefully consider how focused they should be, i.e., which technologies they are willing to engage with. Expertise can be sourced internally from the partnership or externally from other partners and business contacts. For internal expertise it is recommended to “*prepare a catalogue of resource personnel and their expertise, identify the incubator’s and incubatees’ technical needs and assign TAC members with relevant expertise.*”

A very important role of the incubator is to “*assist the incubatee to acquire the relevant technology*” and “*link start-ups to proper suppliers of machinery.*” It should not be underestimated that this kind of service requires food processing line expertise to ensure that machinery has the right dimensioning and fits to existing work processes and machinery. One respondent suggest that decision making about machinery can gain from “*linking such incubatees to other incubatees or companies which are already established*”, thereby obtaining a more practical hands-on impression of the involved challenges. Today, it has become affordable and relatively easy to purchase machinery in China or India, but unfortunately many start-ups have experienced that it can be a challenging process to ensure that the bought equipment becomes functional. The incubator can play a very important role in supporting the incubatees’ investments with technical support, for example, evaluation of the equipment quality and appropriateness, and by building up knowledge about supplier and product credibility.

We have previously discussed the potential role of the AIICs as provider of a combination of agricultural extension service and business incubation in agricultural development projects. Referring to CCLEAR’s involvement in the West African Productivity Programme an interviewee argues that “*These farmer groups are highly marginalized in the economy currently, but the incubator was very successful in empowering farmers, especially start-ups by providing technology, infrastructure and improved livestock.*” Several of the other AIICs have similar experiences. We believe that this business model is a very interesting option for the AIICs to contribute to technology diffusion. Upscaling may be a challenge because this kind of project design is more demanding and reaches fewer farmers than traditional extension services. In the CCLEAR case, the issues was addressed by letting the first generation of trained farmers form the core cadre of farmer groups who they were subsequently responsible to provide peer-to-peer training.

6.5.3.9 Access to Work Space and Production Facilities

Traditional incubators provide office space for its incubatees. This service has been of limited importance in the UniBRAIN case. On the other hand, working space and access to production facilities have been highly appreciated by incubatees. Especially, at ABP where incubatees were initially enrolled in a technical training, access to working space and equipment was appreciated. In many other cases, the incubatees engaged in food production from their home, but “*incubatees’ production spaces cannot meet required standards*”, which inhibits their ability to obtain product

certification. Such premises also make it difficult to scale production when sales increases and in general to concentrate on the business when it is intertwined with the private life sphere.

All AIICs are in the process of planning or establishing production facilities. The purpose is to “*setup standard food processing units for incubatees to facilitate production activities and certification.*” These facilities will also “*allow training and proper demonstration of processing processes.*” The philosophy is that “*the incubation facilities will offer space and machinery for rent for incubatees who have no space and machines, enables them to produce their own products, obtain sales and make savings that will allow them to buy their own facilities in the future.*” For a start-up it is associated with high costs to acquire a standard processing unit. Moreover, even if some machinery has been purchased; the incubatee may still lack access to certain processing equipment.

Whether or not this approach is a viable business model is still a question, but in principle it seems convincing, and as discussed previously, the model is potentially a more controllable income stream than selling advise-based services or obtaining enrolment fees. One comment in the lessons learned survey reminds us to remain costumer driven: “*equipment and/or space for handholding incubatees should be appropriate for such incubatees and should be demand driven from incubatees before acquisition.*”

6.5.4 Graduation and Post-incubation Support

The standard operational procedures used by UniBRAIN AIICs include graduation policies. Due to the relatively short time of real operation (approx. 2 year), incubatees’ graduation has not been experienced as a salient topic. Very few recommendations are made in interviews and the lessons learned survey regarding graduation. One AIIC CEO recommends that “*there should be a limit in time as to how long a business should be incubated. After the graduation, the incubator should help the incubatee to be attached to a formal finance institution in order to grow.*” This quote highlights two important issues:

- The incubation period should be time bound and linked to a progress measure
- The incubatees should be supported to connect to the next relevant level of support in the entrepreneurial ecosystem

The available resources and the mandate of an incubator will determine which development level that start-ups have reached when they graduate. Some incubatees develop faster and reach a level where gradation is realistic earlier than others. Typically, incubatees will be ready to graduate after 2-5 years of incubation. An enrolled incubatee uses resources from the incubator and if the start-up does not develop satisfactory such resources could be used more effectively on other start-ups. Since incubatees often prefer to stay in the safe environment of the incubator, requirements regarding the expected progress of the start-up need to be agreed upon in the contract between the incubatee and the incubator.

It is recommended that the incubator continuously scan the entrepreneurial environment for partners who can continue the support to the graduating start-ups. Such partners may provide funding, access to markets, partnership, mentoring etc. suitable for growth oriented SMEs. For example, SVCDC collaborated with Global Alliance for Improved Nutrition¹¹² who can support SVCDC incubatees with funding and mentorship for the next growth phase.

6.6 Monitoring and Evaluation

Monitoring and evaluation (M&E) is a process that helps improve performance and achieve results. M&E plays an important role in incubation, primarily because incubators need to document their results to organizations funding them. This may lead to an emphasis on assessment of the quantitative achievements, i.e., the monitoring element, rather than the more qualitative evaluation aimed at capturing what can be learned from the experienced implementation processes.

As outlined in Section 4.5.3, the M&E activities used by the UniBRAIN programme were quite extensive. The M&E activities required the employment of a person responsible for M&E based on the MICS system. At the AIIC level the monitoring of incubatees progress was not without challenges. For example:

- The large number of incubatees and the geographical distance between SMEs made collection of M&E data difficult
- The reluctance of some incubatees to share information
- The inaccuracy of data collected by phone or online
- The lack of records in the start-ups

Box 6.6 Unibrain progress indicators

Objective 1: Start-up agribusiness supported incl. university graduates

- Number of start-up agribusinesses that have been incubated
- Number of jobs to be created
 - Of which permanent
- Total revenue generated
- Number of technologies commercialized
 - Of which successfully commercialized
- Number of graduates who have established own businesses within one year of graduation
 - Of whom are woman
 - Of whom are 35 years or younger
- Number of existing agribusinesses to be supported to expand, diversify, enter new markets etc.
- Number of jobs to be created
- Total incremental revenue generated by incubator start-ups
- Number of farm families to benefit as suppliers to supported agribusinesses

Objective 2: Enhancing innovation in established businesses

- Number of agribusiness BSc candidates to receive improved agribusiness courses (improved content)
- Number of agribusiness MSc candidates to receive improved agribusiness courses (improved content)
 - Of whom are women
 - Of whom are 35 years or younger

Objective 3: Potential for up-scaling

- Number of existing agribusinesses supported to expand, diversify, enter new markets etc.
- Additional agribusiness incubators established
- Members of AAIN recruited
- Delegates reached through AAIN conference
- Improved agricultural education uptake

¹¹² <http://www.gainhealth.org/knowledge-centre/country/kenya/>.

Contrary to traditional incubators where incubatees are located at an incubator facility, the ‘off-site’ nature of most AIIC incubatees, for example, farmers located far from the AIIC offices, made data collection difficult.

Box 6.6 shows the criteria used for monitoring the implementation of the UniBRAIN programme’s three main areas of activities: incubation, education, and upscaling. The performance criteria are all quantitative. The criteria clearly indicate the mixed development and business agenda. Criteria such as gender, age, ripple effects such as number of farmers that benefit as suppliers are clearly associated with a development political agenda. Public funded regional development-oriented incubators typically rely on criteria such as total number of successful start-ups, revenue generated by the start-ups, and number of jobs created. Private incubators would focus on number of successful start-ups (for legitimization reasons), capital raised by incubatees, and revenues generated by the incubator. The chosen performance criteria guide the organizational focus and incubators should ensure correspondence between their objectives and the performance measures that aim to support reaching objectives. For example, a goal to reach a certain number of technologies commercialized or start-ups incubated may pose a barrier to reach sufficient quality in providing the necessary support to successfully commercialize or grow ventures.

Qualitative evaluations of the AIICs’ performance were made through annual Danida commissioned external reviews. Internal evaluations of the AIICs had a more informal character but the AIIC has benefitted from sharing and discussing their management experiences at bi-annual partnership meetings. Moreover, the lessons learned report conducted by University of Copenhagen is a post-implementation effort to capture the qualitative dimension of the management experiences gained by the AIICs.

The AIIC CEOs and lessons learned survey respondents provided a number of recommendations regarding project monitoring:

- Ongoing M&E is essential for success
- Set goals/targets that are realistic and achievable
- Carefully select criteria that highlight quality as well as quantity
- All staff should be trained on M&E from project inception
- A functional M&E system should be in place to ensure that the activities go on as planned
- Use a monitoring tool that is simple and has previously proven to work
- Rely on well-known technologies such as google, WhatsApp, e-mail, websites etc.
- Minimize the M&E data and other obligations required from incubators
- Don’t let the ‘fear of failure’ influence your reporting
- Avoid setting fixed benchmarks of what must be achieved in an uncertain future
- Share ideas and information on what works and what doesn’t work

From these recommendations based on the AIIC experience it seems important to ensure that incubator M&E systems are based on simple, well-known technologies, that the data collection is kept at a reasonable level, that goals and criteria are realistic and capture both quantity and qualitative dimensions, and that experiences are shared and discussed within relevant professional communities.

The reluctance of incubatees to provide data may be addressed by applying principles of participatory monitoring and evaluation (PME)¹¹³. PME approaches include a number of different methodologies but a common feature is that the subjects who are being evaluated are engaged in the decision making on which criteria to apply in the evaluation and often also in the collection of data. This may enhance the legitimacy of the M&E process and make it more evident how the M&E activities benefit the involved incubatees.

Ideally, monitoring performance data can be used for benchmarking. Benchmarking enables the incubator to compare its performance on a number of performance measures with the performance of others. Such comparison enables the incubator to identify functional areas where improvement is possible. UBI Global¹¹⁴ is an example of an established benchmarking service that offers a comparison of approximately 500 incubators world-wide.

¹¹³ Who counts reality? Participatory monitoring and evaluation: A literature review. IDS Working Paper 70. Available at: <https://www.ids.ac.uk/files/Wp70.pdf>.

¹¹⁴ UBI Global is a Swedish-based research and advisory firm that produces an annual benchmark report on incubators and accelerators. See: [www. http://ubi-global.com](http://ubi-global.com).

7 Impact and Sustainability

Key Lessons Learned – Impact and Sustainability

Sustainability concept

- Full self-sustainability of a commercially-based incubator cannot easily (if at all) be attained in a period of less than 5-10 years – especially when the concept is new to the setting
- The business strategy must openly address which type of sustainability is aimed for: capital based, cash flow, or strategic funding
- Incubators should avoid depending on one source of funding or revenue alone
- A bottom-up establishment process takes time, but is likely to be the most feasible way of achieving a sustainable tripartite partnership-based organization involving universities, research organizations, and businesses

Facilitating factors

- How to achieve a sustainable organization must be planned already during the project design phase – and plans must be critically assessed by experts in the field
- Incubator managers need a strong focus on revenue generation for sustainability and not only on funds utilization and accountability
- Sustainability requires a revenue generating business model independent of whether it relies on donor funding or profit generation
- The incubation model can provide a gap-filler between technology invention and technology diffusion (similar to the role of agricultural extension services)
- Integration of incubation processes in development projects represents a business opportunity for tripartite agribusiness incubators in the African context
- To attract funding, incubators need to show that they create value for their customers and clients. This requires an effective M&E system and trustworthy communication of the result
- Deep sector insight (in specific value chains) is an important competitive advantage and should form the initial starting point for tripartite agribusiness incubators
- The tripartite partnership model endows an incubator with social legitimacy that facilitates access to institutional partners, for example, the government or donor organizations

Limiting factors

- It is challenging to achieve financial self-sustainability if the incubator is mainly committed to a social development or educational mission
- Operating in a ‘project mode’ constitutes a challenge to achieving financial sustainability as a business organization – thinking in a (research or development) project logics does not foster business thinking
- Bridging technology, business and education forms a socially attractive value proposition, but incubators still need to prove that they can deliver results to attract additional resources

In this chapter we document the development impact and sustainability of the AIICs. After a brief review of the issues surfaced in the lessons learned survey and AIIC workshops, we present the UniBRAIN project-level achievements during the period 2011-2015. We then turn to a discussion

and documentation of the sustainability of the AIICs. We aim to document which elements contribute most to achieving financial sustainability and why the AIICs seem to struggle to successfully achieve financial sustainability.

7.1 Lessons Learned Survey Results

Table 7.1 shows the issues mentioned by interviewees in the lessons learned survey in relation to outcomes and impact. ‘Incubatee’s development’, ‘Employability of students’, ‘Farmer related outcomes’ and ‘Commercialization of technologies’ are the five top-ranking aspects in the ‘worked well’ category. Major categories identified in relation to ‘challenges during implementation’ include ‘Commercialization of technologies’, ‘Incubatee’s development’ and ‘Employability of students’. This category has attracted few direct recommendations in the survey but several recommendations have been identified in the interviews with AIIC CEOs.

Table 7.1 Incubator management practices identified by interviewees in the lessons learned survey.

Impact and sustainability issues addressed in the lessons learned survey	Worked well	Challenges	Recommendations
Achieved sustainability	3	-	-
Commercialization of technologies	5	3	1
Curriculum reform progress	2	-	-
Employability of students	7	1	-
Incubatees’ development	12	5	1
Increased interest in agribusiness	7	-	-
Job and wealth creation	1	-	-
New products on the market	1	-	-
Farmer-related outcomes	5	-	1
Farmers organization related outcomes	1	-	-
Suitability of the value chain	2	-	-
AIIC-level sustainability strategies	1	-	29
Sustainability at the UniBRAIN programme level	-	-	2

7.2 UniBRAIN Achievements during 2011-2015

By the end of 2013 it was highlighted that the UniBRAIN programme document’s targets were over-ambitious and unrealistic due to the late initiation of the implementation and the AIICs’ lack of experience with incubation. It was decided that FARA and ABI-ICRISAT should review and revise the targets. Subsequently, the implementation proceeded satisfactory and the targets were revised and up-scaled in July 2014. The overall performance of the six AIICs is shown in Table 7.2. The figures are based on self-reported data from the AIICs. The table shows the targets set out in the original project document (PD) in 2010 and the adjusted targets defined by programme participants when operationalizing the M&E system. In the following we will discuss the M&E targets only.

Table 7.2 Programme goals and achievements during 2011-2015 (Source: UniBRAIN End of Project Report (2016)).

Main objective areas	Indicators	Total goal 2011-2015		Achieved 2011- 2015	% achieved	
Output #1		PD	M&E		PD	M&E
Start-up agribusiness supported incl. university graduates	No. of start-up agribusinesses that have be incubated	120	90	186	155	207
	No. of jobs created	3,000	2,175	3,382	112	155
	- Of which part-time	2,400	1,740	2,357	98	135
	- Of which full-time	600	435	1,025	170	235
	Total revenue generated (m USD) ¹	3.1	0.9	0.9	29	99
	No. of technologies commercialized	NA	108	58	NA	54
	- Of which successfully commercialized	NA	54	29	NA	54
	No. of graduates who have established own businesses within one year of graduation	NA	117	48	NA	41
	- Of whom are female	NA	35	19	NA	54
	- Of whom are 35 years or younger	NA	47	36	NA	77
	No. of targeted graduates who are employed within six months of graduation	NA	117	106	NA	91
	- Of whom are female	NA	35	50	NA	143
	- Of whom are 35 years or younger	NA	47	102	NA	217
Enhancing innovation in established businesses	Number of existing agribusinesses to be supported to expand, diversify, enter new markets etc.	96	72	192	200	266
	No. of jobs to be created	1,440	NA	NA	NA	NA
	Total incremental revenue generated by incubator start-ups from UniBRAIN activities (m USD) ¹	0.3	NA	NA	NA	NA
	No. of assisted businesses reporting increased income, reduced costs, or decreased production time	NA	45	161	358	NA
Farm families benefiting from expanded markets and better prices	No. of farm families to benefit as suppliers to supported agribusinesses	40,000	25,500	16,728	42	66
Output #2		PD	M&E		PD	M&E
Improving agribusiness education	No. of graduates that have benefitted from improved agribusiness education (internship, attachments, reviewed or new curriculum)	1,560	1,170	1,129	96	72
	- Of whom are BSc and Diploma	1,200	900	1,069	89	119
	- Of whom are MSc	360	270	60	15	20
	Total number of students receiving improved education	1,560	1,170	1,129	72	96
	- Of whom are female	NA	351	410	NA	116
	- Of whom are 35 years or younger	NA	468	1,125	NA	240
	No. of universities provided with improved agricultural education products					
	- In initial consortia	NA	8	8	NA	NA
	- Additional	30	30	140	467	467
Output #3		PD	M&E		PD	M&E
Potential for up-scaling	No. of AIIC developed based on the UniBRAIN model	11	11	11	100	100
	- Of which are initial consortia	6	6	6	100	100
	- Of which are additional consortia	5	5	6	120	120
	No. of incubator consortia of which establishment is in pipeline	10	10	17	170	170

Note: ¹ Conversion rate of 1 USD = 5.0 DKK is used.

In relation to Output #1, the incubators have been very successful in reaching the targets for start-up incubation and innovation support to established businesses with a performance rate of 207% and 266%, respectively. A substantial part of the former category has been university students and graduates and the latter category includes farmers and farmers' organizations. The numbers indicate how many have received support during the three year period. 48 university graduate incubatees have established their own company equal to 41% of the performance target, and 106 graduates have been employed equal to 90% of the performance target. No explicit information on the number of graduated start-ups or their success rate after graduation has been obtained. Given the short *de facto* implementation phase these numbers are like to be substantially lower.

Job creation has also exceeded the expectation by 55% and especially the permanent job creation has been successful with a performance rate of 235%. Job creation numbers for the existing businesses are not provided as it was realized that realistic figures for this indicator were difficult to obtain. The amount of total incubatee revenue reached 99% of the adjusted target that had been significantly reduced compared to the original level in the project document level. The number of incremental revenue generated in existing businesses is not provided, which also illustrates the inherent methodological difficulties of obtaining or estimating this value. The number of farm families that has benefitted as suppliers to supported agribusinesses has reached 66% of the target value equivalent to approximately 25,500 families.

58 technologies have been commercialized of which 29 have been successful which constitutes 54% and 54% of the target values. It is not clear what 'successful commercialization' indicates in this context.

Overall, the AIICs seem to have been very instrumental in reaching high numbers of incubatees and businesses but it is unclear how many new businesses have graduated as sustainable enterprises. Considering the relatively short implementation phase it seems premature to judge the level of success of the process. The number of technologies 'taken up for commercialization' seems impressive although below the performance target. The use of the word 'commercialization' is somewhat confusing in this context. A more clear distinction between business start-ups' adoption of existing technologies (for commercial purposes) and the 'commercialization' of newly invented technologies could be useful. It seems that most of the technologies that have been taken up by incubatees are existing technologies with well-known business models, whereas the introduction of entirely new technologies seems rare. This underlines the impression that the AIIC partnerships are primarily efficient in supporting the diffusion and adoption of tested technologies.

The number of graduated students that have benefitted from improved education (Output #2) through internships, attachment and reviewed or new agribusiness curricula on the level of BSc/Diploma and MSc has reached 119% and 20% of the performance targets, respectively. UniBRAIN has been very successful in reaching its primary target groups of woman (116%) and youth younger than 35 years (240%). The outreach in terms of the number of universities that have been provided with improved educational products is very impressive. In addition to the 8 UniBRAIN universities, 140 universities across Africa have been provided with, for example, revised agribusiness curricula at Diploma, BSc, MSc and PhD levels.

Finally, the UniBRAIN programme has been very instrumental in pursuing its goals in relation to upscaling the UniBRAIN model (Output #3). The target of expanding the original 6 AIICs with

additional 5 has been exceeded. According to the UniBRAIN Project Completion Report (2016), at least 8 additional incubators have been established based on the UniBRAIN model and funded by other donors. This includes five Food Processing Business Incubation Centres funded by the Government of India, a dairy incubation centre at Egerton University in Kenya funded by University of Wageningen, a seed incubation centre in Ghana funded by Alliance for a Green Revolution in Africa, and the Mali Agribusiness Incubation Hub partly funded by the Africa Rice Centre in Benin. Overall, the UniBRAIN programme has been very successful in attracting interest to the AIIC partnership model and establishing a basis for continued upscaling of agribusiness incubation through its transformation into the African Agribusiness Incubation Network (AAIN). AAIN will be addressed in Chapter 10.

The choice of impact indicators is complex. First, a causal link between the service provided and the achievements of incubated start-ups is difficult to isolate from other factors influencing a young start-up. Second, monitoring the start-up's performance is time consuming, data collection difficult and obtained data are likely to be highly uncertain. Finally, the choice of indicators for a development agency-funded programme discloses an inherent dilemma. A traditional development goal is increased employment, and 'number of jobs created' is one of the main performance indicators for the AIICs. In practice, incubation and business development may lead to production efficiency gains and therefore, at least in the short run, reduce the need for employees. New business models may also revamp established ways of doing business and disrupt existing industries. One company's successful growth may come at the expense of the competitors who have to lay off employees. Similarly, 'the number of start-ups' also say very little about the quality and potential societal value of these enterprises. The ultimate 'acid test' is whether an incubator is able to document that it has helped create independent start-ups that are financially sustainable.

Future incubators are recommended to explicitly address the right balance between social development and financial development objectives and consider how different indicators may influence the decision making an outcome of a project. Moreover, indicators should be SMART¹¹⁵ and easily verifiable to minimize the needed effort by the incubator staff. Here, quantifying may not be the only solution. One way to address this could be to provide more detailed information about the 10 most successful start-ups in the AIIC. An AIIC may have a long tail of low performing incubatees and only a few high performing ones who constitute the success of the incubator.

7.3 Financial Sustainability – Opportunities and Challenges

In this section we will briefly introduce different understandings of the concept of 'sustainability' and its relationship with the concept of 'independence'. Moreover, we will summarize the perceptions of sustainability among AIIC CEOs and lessons learned survey respondents.

¹¹⁵ SMART is a commonly used acronym that highlights that indicators for measuring objectives should be Specific, Measurable, Achievable, Relevant and Time-bound.

An AIIC can be sustainable in three different ways. First, it can be self-sustainable referring to the ability of the incubator to sustain itself without external support. To be self-sustained the AIIC needs to generate a positive cash-flow that enables it to continuously meet all its financial obligations. Second, the AIIC can also be sustained based on strategic funding, for example, provided by a donor and over a number of year. The UniBRAIN programme is an example of such funding that has secured the AIIC's existence for a number of years. Finally, the AIIC can be sustainable based on a capital reserve, i.e., access to an endowment or the incubators own capital that enables the incubator to cover running expenses. Ideally, a capital reserve may be established through obtaining an equity share in successful incubatees' start-ups and later obtaining a financial gain on selling the shares.

The objective of the UniBRAIN was to establish AIICs that at the end of the project would be independent and sustainable. Financial and organizational independence are closely linked to sustainability and operating in a business-mode requires independent and proactive decision making on the part of the AIIC management. The level of independence depends on several factors. First, without self-sustainability the AIIC is unlikely to be truly independent of its sponsoring organizations. Second, the level of independence is likely to be influenced by who initiated the project and with what purpose. Third, independence is likely to be highly influenced by the governance mode and power relations between the partner organizations. Finally, at the management level, the CEO competencies and success will influence the ability to operate independently.

Box 7.1 shows the recommendations of the lessons learned survey respondents regarding how to achieve sustainability. First and foremost, the sustainability issue must be explicitly addressed already in the project design phase. AIIC CEOs argue that sustainability was not really addressed in the initial phases of the project. In practice, although substantial effort was invested in elaborating business models and business plans, none of these have shown to lead to financial sustainability. Thus, it is recommended to spend time on it and consult the necessary expertise to elaborate and critically assess business models and plans with a clear focus on financial sustainability. Even if self-sustainability this is not achievable in the short run, it is important to know and address this from the initial stages because strategizing for sustainability needs to become an important managerial focus.

Survey respondents and CEOs hope for additional strategic funding from the government or donors to secure the continuation of the UniBRAIN AIICs. Conversations with government officials indicate that public funding may be an option in some cases, but AIIC CEOs argue that this may only be a long term opportunity because such arrangements take substantial time to settle. Also, it is argued that *“incubators need to strengthen institutional capacity in order to attract more funding.”* It is likely that both donors and public agencies will be more likely to invest in stable organizations that

Box 7.1 Sustainability recommendations

- Address the issue
- Sustainability plan from outset
- Attract donor funding
- Government funding
- Identify strategic partners
- Integrate in AIIC partners' budget
- Choose the right incubatees
- Low cost replicable revenue streams
- Benefit from incubatees' support
- Obtain part of incubatees' revenues

(Source: Unibrain lessons learned survey)

have proven their ability to sustain themselves while delivering on their mission over a longer period. This may be closely linked to the importance of strategic partners as a source of sustainability. Most respondents are not specific in defining the role of such partners, but one argues that incubators should be “*integrated it in the budget process of the supporting institutions.*” A possible scenario is that the sponsoring organizations, i.e., AIIC partners guarantee the sustainability of an AIIC, for example, by promising to cover an incurred financial deficit.

A set of answers relate to the core incubation business. Choosing the ‘right’, i.e., potentially most successful incubatees, is a prerequisite for success. But finding adequate low cost and steady income streams is an even more important requirement because the benefits from the engagement with incubatees are likely to have a long time horizon. In the short run, AIICs need to find ways to make incubatees contribute to AIIC sustainability by developing mutually acceptable business model that allows incubators to tap into the revenues generated by the start-ups. In practice, this has shown to be a challenge.

7.3.1 Which Elements Contributed to Achieving Financial Sustainability?

In this section we will analyse the actual income generation achieved by the AIICs and identify which elements have contributed the most to financial sustainability.

The achievement of self-sustainability depends on the revenue streams identified and discussed in Section 5.7. Table 7.3 shows the self-reported income obtained by the AIICs during 2012-2015. The income category column is ranked according to the AIIC CEOs’ ranking of the different income streams’ importance for the AIIC at the present development stage. The most important revenue stream is considered renting out technical facilities and the least is sale of secretarial and office services. The two last categories in Table 7.3 were not included in the original ranking survey.

The two revenue categories that have contributed most to the AIICs are Sale of products, goods and commodities and Consultancy services for development partners and government. One or both of these categories are important income sources for the AIICs except for CURAD for whom Private sector support and awards have been an important income source. Training and workshops also constitute a relatively important income stream for most AIICs, whereas Income sharing from incubatees’ sale has only been successful at ABP where production processes are controlled through technology workshops.

Table 7.3 Income categories ranked in order of perceived importance and generated during 2012-2015 (Own survey data).

Income categories	ABP	AgBIT	CCLEAR	CURAD	SVCDC	Total
Renting out technical facilities	4,059	7,040	535	658		12,292
Sale of products, goods and commodities	82,589	26,819	11,231	146	14,690	135,475
Income sharing from incubatees' sale	44,120					44,120
Consultancy for development partners and government		23,735	23,923		17,500	65,158
Rental income from physical space	182			200	4,000	4,382
Training and workshop services	206	7,419	23,844	8,000	3,680	43,149
Consultancies for large/corporates firms						
Interest on loans to incubatees						
Consultancies for SMEs						
Facilitating investments in start-ups						
Incubatees service fees	860			606	794	1,785
Equity holding/shareholder income						
Sale of equity/company shares						
Royalties from IPR/patents/commissions						
Sale of secretarial and office services			4,494			4,494
International agribusiness competitions ¹						
Private sector support and awards ¹	2,061			18,887		20,948
Total 2012-2015	134,077	65,013	64,027	28,497	40,189	331,803

Note: ¹ The category was not part of the original ranking survey.

The overview of the revenue streams highlights that the AIICs have enacted slightly different strategies, but in general they have relied on an inside-out strategy, relying on their existing resources and strengths. AgBIT, CCLEAR and SVCDC have CEOs who are experienced consultants. ABP was created based on market-tested products, for example, vacuum packed matoke. The production technologies were shared with interested incubatees who in turn agreed to market through ABP and share revenues from their sales with the incubator. AgBIT, who's CEO had previous experience with vegetable production and the horticulture value chain, established a vegetables production on the land obtained thorough their public research organization partner. SVCDC's income primarily steams from selling pest resistant grain bags (USD 17,000) through collaboration with University of Purdue and sorghum seed sales enabled through the collaboration with its partners. CURAD stands out because they have primarily focused on leveraging the incubation process as a mean of obtaining private company support for organizing entrepreneurship competitions. In this way the CURAD CEO, who is the only CEO with a previous professional experience, both as an incubatee and as an incubator employee, has chosen a more opportunity driven outside-in strategy aiming at meeting the (institutional) market demand for start-up events. Overall, it seems that the ability to relatively quickly establish an income stream based on a product or knowledge base available to the AIIC in the initial phase is an important factor in aiming for financial sustainability.

Thus, to ensure organizational sustainability it is recommended that future incubators focus on identifying existing short-term business opportunities in areas where they already have experience and social networks as a strategy for the initial consolidation of the new organization. This strategy requires the ability to effectuate (see Section. 5.5.1) and reliance on available means to

pursue emerging opportunities within a broadly defined scope of incubation, which in turn requires a high level of managerial discretion and independence at the incubator management level.

An important sustainability promoting factor is the local ownership and embeddedness of the AIICs. The bottom-up process through which the AIICs were formed has allowed partners to come together out of strategic interest in an activity that they have had the opportunity to shape according to their individual organizations' missions and visions. Thus, incubator projects were shaped around existing expert knowledge and long-term institutional interests. This contributes to the ability to establish an attractive value proposition which is fundamental for achieving sustainability. It also enables the AIICs to strategize based on core competencies and in areas where they have a competitive advantage. At the practical level, having access to physical facilities and other resources provided in-kind by partner organizations facilitates the AIICs' transformation from a highly subsidized project to business-based enterprises.

The period in which the AIICs have been operational have been too short to have achieved financial sustainability when operation at the present level of activities. We find that establishing a self-sustained business based on incubation services is difficult in the African context (as in most other contexts), especially when targeting inexperienced entrepreneurs with little sector insight and experience. Without the ability to provide or facilitate funding (beyond small-scale proof of concept funding in the range of USD 5,000-10,000), AIICs will have limited attraction to more ambitious start-up ventures. A business model that relies on revenues from providing access to small-scale production facilities is also problematic if the issue of incubatees' access to capital is not successfully addressed.

A consultancy-based approach targeting development agencies and providing project-based support for small-scale farmers seems to offer a feasible revenue source that can contribute to sustainability. For example, in 2014 and 2015, CCLEAR obtained additional funding from the World Bank of about USD 700,000 through the Skills Development Fund Ghana and USD 20,000 from the NGO World Vision for a grasscutter project from which CCLEAR could charge a 5-10% overhead¹¹⁶. In principle, the capabilities and resources of the tripartite partnerships situate the AIICs ideally for targeting this market and the present interest in the role of agribusiness as a driver of development supports this strategy. On the other hand, incubators should pay attention to ensuring a good match between project involvement and their organizational goals and mission.

7.3.2 Which Elements Limited the Ability to Achieve Financial Sustainability?

The characteristics of the successful agribusiness incubators reviewed in the InfoDev study in Chapter 3 are that they:

- Received external funding over a long period of time
- Are focused on a core business area

¹¹⁶ From Unibrain to Africa Agribusiness Incubator Network (AAIN), the Journey, 2012-2016. Programme Completion Report. March 2016. FARA.

- Have a strong institutional grounding

The AIICs have not been able to establish sustainable and income generating revenue streams. Based on the audited annual accounts (see Table 5.9), the most successful incubator was in the period 2012-2014 able to generate USD 20,600 in income with an operational expenditure of USD 723,300. This clearly indicates the difficulty in establishing positive cash flows and self-sustainability under the conditions in which the UniBRAIN programme have operated. At the same time it should be recognized that most incubators are established with public funding and an EU study shows that on average approximately 37% of the operational costs are covered public funding¹¹⁷.

The nature of business incubation makes it an uncertain and long-term process. Developing a new venture from the idea stage to a self-sustained enterprise typically takes 3-5 years. The process can be shortened if the incubator focuses on accelerating already established start-ups but the outcomes are still very uncertain and as the UniBRAIN programme has experienced, it is very difficult to convince incubatees that they should pay for the services provided. To achieve a reputation where incubatees are willing to pay for services requires three things: 1) a track record that demonstrates that the service is worth the cost, 2) a high level of relevance and quality in service portfolio, and 3) incubatees/customers that are able to pay.

The relatively short *de facto* implementation period of approximately two year has been too short a period for the AIICs to establish a reputation and a convincing track record. It is obvious from the conversations with stakeholders that the incubation concept is appealing to a range of institutional players and that the AIICs can gain the needed institutional legitimacy, not the least due to the involvement of prominent partners such as national universities and research organizations, but it is also clear that more concrete results are needed in order to attract additional support. If AIICs succeed in demonstrating their success it is not unlikely that financial sponsorship for a new 3-4 year period can be achieved through new donor or government funding.

In most cases, the AIICs' partners were unfamiliar with the incubation process as well as the commercial focus in general. Very few of the staff members had any previous experience with incubation or business development support. It takes time to gain the experiences needed to secure relevance and quality in the support to each individual start-up. Incubation is not about lecturing and teaching, but an individualized mentorship and coaching process designed to the specific venture. Learning to master this process efficiently takes time and requires a stable organization which can retain individual and build up organizational knowledge.

The AIICs are grounded in institutional partnerships. In some cases a lead institution is clearly defined and in other situation it is less clear. The partnership format joins unique resources, but it may also dilute the individual organizations sense of ownership to the AIIC. The AIICs' status as independent non-profit enterprises may also inhibit closer formal and informal links to a strong lead organization that could step in as a guarantor to ensure organizational sustainability.

¹¹⁷ Benchmarking of Business Incubators. Final Report. The European Commission's Enterprise DG, Brussels, pp 84.

Renting out technical facilities is recognized by all AIICs as an important source of continuous income. According to the AIIC CEOs the UniBRAIN implementation phase has been too short to strategize for the necessary resources to secure physical and equipment needed to establish these facilities. The UniBRAIN programme budget constraint on fixed assets acquisition is also argued to have limited the establishment. It remains to be seen if this strategy is a viable way to sustainability, but several of the InfoDev examples in Table 2.1 have a similar emphasis on providing the facilities and marketing framework or incubatees' production.

Finally, the AIICs' struggle to achieve sustainability may also be ascribed to a socio-cultural element. The establishment of the AIICs was framed as a business creation venture launched in a project mode and headed by traditional institutional players heavily engrained in traditional project-based management thinking. This may be one of the reasons for the limited attention to sustainability issues early on in the project as indicated by several interviewees.

7.4 The Influence of Government Policies and Processes on Agribusiness Incubation

In this section we will address the lessons learned in relation to how host countries government policies and processes have influenced agribusiness incubator performance and how the UniBRAIN incubators have been able to benefit from public-private partnerships.

Governments play a major role in supporting business incubators. Most of the agribusiness incubators in the InfoDev study presented in Chapter 2 obtain substantial public funding. Incubators are often used as a means of regional development and have a long history as a policy tool used by national and regional governments to foster growth and job creation.

The UniBRAIN programme did not initially require involvement of government agencies in the host countries. But several of the incubators have subsequently been successful in attracting support and funding from governments agencies. Table 7.4 shows the main examples identified. Some of these resources are provided by the public AIIC partners (P) and some are provided by public agencies.

Direct influence of public policies on the AIICs has been limited. The main influence has been in the other direction – from AIIC to government agencies. Several examples illustrate that government agencies recognize that the UniBRAIN model can have a potential to support public policy implementation. With rapid growing populations and urbanization rates, many African governments are focused on job creation and economic growth through support to the agricultural and agribusiness sectors. On the other hand, agricultural technology diffusion, inclusion of farmers in the formal markets and supply chain development are huge challenges. The UniBRAIN model provides an interesting new approach to address these types of challenges.

For example, in 2010 the Kenyan parliament enacted the devolution of a substantial part of agricultural policy functions to the county government level. Facing the challenge to promote agricultural sector growth, two counties have engaged SVCDC to obtain help to develop local agricultural incubator based on the SVCDC's approach. Likewise, in Ghana, the National Board for Small-Scale Industries (NBSSI) intends to establish four business incubators in four different geographical regions based on the experiences from the UniBRAIN programme.

Table 7.4 Public funding obtained by UniBRAIN incubators.

Incubator	Public funding obtain	Agency	Total value (USD)
ABP	Truck, pick-up van, machinery, furniture, research grant	Government of Uganda	210,000
AgBIT	Office building and land	National research organization (P)	73,000
CCLEAR	Land in industrial park to establish incubator facility	National research organization (P)	150,000
CURAD	Land in government's industrial park to build production facilities, office building	Uganda Investment Authority	150,000
SVCDC	Office building, land in university industrial park, lab access, field vehicle, demo plots	Public university (P); National research organization (P)	105,000

Note: (P) indicates that resource is provided by an AIIC partner.

In Mali, the Ministry of Youth Employment has expressed interest in collaborating with ABI-ICRISAT on the establishment of an agribusiness incubator that would integrate basic agricultural skills training to farmers, link young entrepreneurs entering the agricultural service sector with input providers and incubate their start-ups, and provide funding and land for the establishment of agricultural cooperative who the incubator would be supporting in their marketing process. In this way the incubator provides a holistic solution that integrates governmental support, technical training, business training, farmers' collective action and product marketing. Another example of public agency interest in the opportunities in the UniBRAIN approach is CCLEAR's engagement in several publicly funded small-scale farmer support programmes where they combine technical support, business incubation, and support for market linkages.

CURAD through its private partners NUCAFE participated in the Uganda National Coffee Convention and has successfully lobbied for the new National Coffee Policy in Uganda. After the approval of the Coffee Policy, NUCAFE obtained funding from USAID to popularising the policy among coffee farmers and other stakeholders.

Several AIIC CEOs argue that the implementation phase has been too short to convincingly demonstrate the value of investing in the AIICs and to influence governmental agencies to grant support to the projects; but the general impression is that policy makers and public agencies are very receptive to the agribusiness incubation idea and that possibilities for obtaining funding exist. The AIICs are highly relevant for the host countries agriculture sector and private sector development plans and policies. Most countries have entrepreneurship support programmes, for example, small grant schemes that AIIC incubatees may potentially benefit from, but it takes time to identify these programmes and establish the collaboration necessary to obtain support. It is recommended that future support to incubator establishment include a thorough analysis of public entrepreneurship support policies and that AIICs aim to establish ongoing dialogue with the relevant government agencies and decision makers to identify and develop opportunities for collaboration.

8 Enhancing Agribusiness Education

Key Lessons Learned – Enhancing Agribusiness Education

- Changing curriculum and educational systems is a long-term process
- Change processes in higher education institutions are highly dependent on local administrative routines and policy processes
- An externally initiated project-based and time-bound approach may have difficulties assuring changes in curriculum in the short term
- Involving ANAFE as the partner responsible for curriculum development has provided significant advantages in terms of providing access to specialized knowledge and experience in curriculum development in the African context
- As a well-established pan-African institution, ANAFE had the connections, legitimacy and interest required to engage in the long-term advocacy process needed to drive the change process in agribusiness education in Africa
- Compared to an isolated project model targeting the UniBRAIN universities only, the involvement of ANAFE is likely to result in a much more profound long-term impact
- The Unibrain upscaling objective (#3) has been furthered through the synergy ensured through ANAFE's ability to leverage on and integrate UniBRAIN activities with other similar projects in its project portfolio, notably the SASACID project
- ANAFE's process has eased the implementation at the university level by ensuring wide-spread stakeholder involvement – which now may not be necessary to the same extent in the local curriculum adoption process

In this chapter we review the UniBRAIN activities associated with the enhancement of the agribusiness education within the UniBRAIN partner universities and beyond. The main focus within this activity area was on a participatory development of new agribusiness curricula at all levels of higher education from BSc to PhD. The chapter first map and discuss each step in the curriculum development process. Next we discuss the effort done to improve the attachment and internship practices at the higher education level, and finally we discuss the Earn as You Learn model adopted by several UniBRAIN universities.

8.1 Background and the Role of ANAFE

Enabling agricultural graduates to perform effectively in the agricultural sector is a daunting challenge that Africa intends to meet. Indeed, youth engagement in agribusiness is an issue that is prominently on the agenda in high-level politics; and for years African governments has been touting the goal to increase the number of youths creating competitive agribusinesses. These policies, to a large extent aim to reduce the cost of doing business, while facilitating the access to diverse funding opportunities. Furthermore, several support mechanisms have been enacted to facilitate youth entry into the agribusiness industry. For example, AGRA provides training and skills enhancement on leadership and business management to rural youth groups. Likewise, CTA promotes ICT-based agro-entrepreneurship, while the African Development Bank seeks to facilitate the access to a range of financial services.

In 2010, the Danish African Commission recommended focusing on and investing in post-primary education based on the requirements of the private sector and emphasised that “African countries and regional organizations, supported by development partners, should also promote better linkages between university education, research and the private sector in agricultural development and value chains”¹¹⁸.

This is the backdrop for the prominent role that agribusiness education plays in the UniBRAIN programme. The major rationale for UniBRAIN’s involvement relates to its Output #2: “Agribusiness graduates with the potential to become efficient entrepreneurs produced by tertiary educational institutions.” The specific outputs of the programme included:

- a) that the university agribusiness curricula was aligned with the needs of the market
- b) that more students benefitted from an improved agribusiness education
- c) that more agribusinesses were started by graduates, and
- d) that more graduates were employed in the private agribusiness sector

In relation to Output # 3: “UniBRAIN’s innovative outputs, experiences, and practices shared and up-scaled” the specific outputs included that universities outside of the UniBRAIN programme would be in the process of revising curricula and teaching materials and methodologies based on UniBRAIN products.¹¹⁹ To reach these outcomes it was planned to:

- Identify requirements for improved agribusiness education
- Develop improved agribusiness curricula
- Develop contextualised and up-to-date training materials and resources
- Develop improved agribusiness teaching and learning approaches, methods and aids and test and validated them
- Track the careers of graduates to assess the benefits of the improved agribusiness education
- Extend improved agribusiness education to non-UniBRAIN universities

UniBRAIN’s involvement in improving agribusiness educations was headed by ANAFE, who was the lead partner on curriculum development issue. The UniBRAIN Project Document (pp. 2-3) stated that:

“ANAFE will use its experience, in leading the largest tertiary education network in Africa and spearheading curricula change, to ensure that improvements in agribusiness education not only happen, as expected but are also continuously improves as lessons emerge from experience in the

¹¹⁸ Ministry of Foreign Affairs of Denmark (2009). Realising the Potential of Africa’s Youth Report of the Africa Commission May 2009, p. 9. The report can be accessed at:

http://www.netpublikationer.dk/um/9336/pdf/realising_potential_africas_youth.pdf.

¹¹⁹ Unibrain Project Document, p. 13.

universities associated with the incubators. ANAFE will also ensure that the products and best practices are disseminated to other universities.”

ANAFE collaborated with key stakeholders, such as the UniBRAIN facility, universities and private sector organizations to reach the above-mentioned outputs. The UniBRAIN project document assigned the following specific responsibilities to ANAFE¹²⁰:

- Provide performance and quality assurance in respect of the improvement of agribusiness education
- Work with the incubators and associated agribusiness faculty staff in planning and designing improvements to agribusiness courses
- Help ensure that the universities associated with UniBRAIN take optimal advantage of the incubators to improve the agribusiness education that they provide
- Be a knowledge source on the lessons learned by other initiatives for improving agribusiness education
- Raise UniBRAIN impact by disseminating improved agribusiness education products amongst its wider membership and by helping internalising them in non-UniBRAIN universities and colleges

While engaged in UniBRAIN, ANAFE simultaneously implemented the Swedish International Development Cooperation Agency (SIDA) funded SASACID project in parallel with the UniBRAIN programme. The two projects were complementary and this allowed ANAFE to leverage additional resources in support of the UniBRAIN objectives.

ANAFE visited at least twice all the AIICs and their university partners, and participated in the AIICs' launching ceremonies. Table 8.1 provides a timeline showing the major activities and outcomes from the ANAFE-led activities during 2011-2016.

ANAFE conducted visits to five AIICs¹²¹ during September and October 2012 in order to 1) familiarize itself with what the AIICs were doing, 2) explore opportunities for partnership, and 3) strategize on how to work together with the consortia. Several areas were identified for potential collaboration: improvement of attachment and internship programmes, curriculum review and development, selection of incubatees, documentation of lessons learned during incubation, strengthening the participation of lecturers from the consortia universities in incubation processes, skills enhancement of lecturers, and development of learning resources.

The documentation of the incubator experiences was identified as an area lacking behind. The AIICs were busy implementing and little time was available for documenting. ANAFE offered to support the documentation by facilitating MSc students that would conduct the documentation studies funded by the AIICs. The documentation could then provide input for the elaboration of

¹²⁰ Unibrain Project Document, p. 23.

¹²¹ Synthesis of outcome of visits to the UniBRAIN consortia compiled by ANAFE Secretariat, October 2012.

learning resources to be used by the university to enhance understanding and promotion of incubation. In the following we elaborate on the activities conducted by ANAFE including:

- Agribusiness curricula development
- Agribusiness internship and attachment guide
- Earn as You Learn programmes

Table 8.1 Timeline of ANAFE led activities during the UniBRAIN programme.

Year	Activity
2011	
October	A survey of agribusiness education programmes.
2012	
February	The UniBRAIN Agribusiness Curriculum Development Workshop took place between 27 and 29 February 2012 at Whitesands Hotel, Mombasa Kenya.
September	<i>Publication:</i> Tracer studies conducted in several countries including Ghana, Kenya, Uganda and Zambia.
Sept.-Oct.	ANAFE visits the AIICs.
October	<i>Publication:</i> Synthesis of outcome of visits to the UniBRAIN consortia.
2013	
April	Agribusiness Tracer Study Validation Workshop held on 9-10 April 2013 in Mulungushi University, Kabwe Zambia.
June	<i>Publication:</i> A Tracer Study of Graduates from the Universities Involved in the UniBRAIN Consortia in Africa: Linking Training of Agriculture to Agribusiness Development.
July	Policy Dialogue on Curriculum Reforms held as a side event during the FARA Science Week in Accra (Ghana) in July.
October	The Agribusiness Education Fair held on 10-12 October at World Agroforestry Centre in Nairobi brought together over 90 universities, research, and private sector leaders to deliberate on how to make Tertiary Agricultural Education (TAE) more relevant to business development in Africa.
November	Curriculum Development Workshop in for collaborative development of innovative agribusiness curricula organized in Mulungushi (Zambia).
December	The Learning Material Development Workshop held on December 9-13 in Abidjan, Cote D'Ivoire in partnership with Houphouet Boigny University (SASACID programme).
December	Curriculum Development Workshop held on December 2-4 in Kisumu (Kenya) in partnership with Rongo University College. Rongo University College volunteered to pilot the agribusiness curriculum at BSc level.
2014	
February	<i>Publication:</i> Agribusiness Curricula Framework: Bachelors, Masters and PhD.
May	ANAFE organized a workshop on the May 26-27 to development an innovative attachment/internship agribusiness guide for sub-Saharan Africa.
November	Graduate Business-to-Business Meeting organized on November 17-18 in Nairobi, Kenya.
2015	
January	<i>Publication:</i> Agribusiness Policy Framework for Sub-Saharan Africa: Seeking the Balance and Consensus – AIIC Best Practice report.
January	Agribusiness Curriculum Implementation Feedback Workshop held at Rongo University College.
June	Agribusiness Innovation Camp (AIC) held at AICAD on June 19.
2016	
January	<i>Publication:</i> A Guide to Agribusiness Internship and Attachment in Sub-Saharan Africa.

8.2 Agribusiness Curriculum Development

The curriculum development process was based on the ANAFE methodology for developing a curriculum (DACUM) that was refined to the need of agribusiness curriculum development (see Box 8.1). The DACUM methodology emphasizes the active involvement of different stakeholders, notably graduates employed in the relevant sectors. In 2011 ANAFE conducted a review of agribusiness curricula offered at certificate, diploma, BSc, MSc, and PhD degree levels in selected African institutions. Based on this initial overview, an agribusiness curriculum development workshop was conducted in February 2012. The curricula were informed by findings from a tracer studies conducted in several countries including Ghana, Kenya, Uganda, and Zambia in 2012. The draft curricula were reviewed in regional workshops for collaborative development of innovative agribusiness curricula organized in Nairobi, Kisumu (Kenya) and Mulungushi (Zambia). The result was supplemented with input obtained through a policy dialogue on the need for curriculum reforms and modalities for implementing them conducted as a side event on curriculum reforms held during the FARA Science Week in Accra (Ghana) in July 2013. Finally, the final curricula frameworks for all the five degree levels were published in 2014. In the following we elaborate further on each of these activities.

Box 8.1 The DACUM methodology

The DACUM process is guided by the following principles:

- Stakeholders can define their job requirements more accurately than anyone else
- Any job can be effectively described in terms of the tasks that successful workers in that occupation perform
- A curriculum for a specialized training should aim at developing the required competences for performing the identified tasks

8.2.1 Regional Agribusiness Curriculum Survey

As an initial step in the curriculum development process, ANAFE conducted an agribusiness curriculum survey in eastern and central Africa, African humid tropics, southern Africa, and the Sahel. Based on these surveys the following was concluded:¹²²

- Agribusiness curriculum needs to be structured in a way that enhances interaction between agribusiness students and the industry
- Agricultural industries have a role in supporting agribusiness graduates to be entrepreneurs
- Existing agribusiness curricula enables students to gain a wide exposure of the subject. However, there is need for more practical sessions for such students to sharpen their entrepreneurial acumen
- Internships are needed for agribusiness graduates to achieve the UniBRAIN purpose of job creation
- Teaching and learning materials on enterprise development by graduates need to be developed from the success stories of the start-ups and on-going incubator businesses

¹²² Report from Agribusiness Curriculum Workshop Mombasa, February 2012. ANAFE: Nairobi, p. 10.

8.2.2 The Initiation of the Agribusiness Curriculum Development Process

The workshop held in February 2012 included 43 participants from UniBRAIN AIICs, as well as from other higher education institutions and private sector enterprises in eastern, central, and southern Africa. The aim of the workshop was to “develop consensus on the gaps and opportunities of the agribusiness curriculum vis-à-vis preparation of graduates to create jobs along the agricultural value chain”¹²³ Moreover, the workshop should initiate the process of participatory development of an innovative regional agribusiness curriculum framework; develop the UniBRAIN internship programme based in the AIICs; and elaborate an action plan for the implementation.

The workshop was organized around six key sessions including:

- Presentations of regional agribusiness curricula surveys
- SWOT analysis of education in Africa
- Sample agribusiness curricula
- Internship programme within UniBRAIN
- Agribusiness curricula framework
- Collaboration and partnerships

The following conclusions were drawn from a discussion of the agribusiness curriculum survey results:

- Current agribusiness teaching methods and tools are weak in addressing emerging opportunities and challenges
- There is limited use of agribusiness incubators for agribusiness education
- Frameworks for commercialization of prototype technologies developed by universities are lacking
- Weak university-industry linkage
- Weak internship programmes
- Poor attitude towards agribusiness among both ongoing and prospective students
- Existence of a mismatch in employers’ expectations to the graduates and the actual skills and competencies of the graduates
- Models of agribusiness education are largely borrowed from outside Africa yet the situation in Africa is different
- There is duplication of courses in agriculture and agribusiness.

¹²³ Report from Agribusiness Curriculum Workshop Mombasa, February 2012. ANAFE: Nairobi.

Workshop participants conducted a SWOT analysis that helped identify general and regional key issues and established the backdrop for the curriculum development. The programme moreover included an introduction to concepts in curriculum development and the presentation of two cases the agribusiness curriculum for BSc and MSc programmes at University of Mulungushi in Zambia, and for BSc and PhD at University of Ghana.

As part of the UniBRAIN programme ANAFE have established internship development projects at several universities. Two additional cases focusing on the experiences with the internship programmes from Chepkoilel Univesity College, Kenya and University Abdou Moumouni, Niger, were also presented. Lessons learned from the ANAFE internship programme is shown in Box 8.2.

Box 8.2 Lessons learned from ANAFE internship programme

- Advisory services for the farmers are needed and graduates can fill this need
- Courses related to food handling should be included as most agribusiness industries deal with food processing
- Demand for skills in value chain linkages, marketing, and value addition is high
- Firms are unwilling to share information on costs, inefficiencies, storage and marketing losses with interns
- Funding is needed to enable to obtain attachment in the industry
- Strengthening university-industry link is required
- There is need for enhancing practical skills in the training by attaching students to various agricultural enterprises
- Universities need to include management and social studies in agricultural programmes

Based on the above-mentioned activities, and using the curriculum frameworks from Ghana and Zambia for inspiration, participants were divided into four groups to work on curriculum frameworks for diploma, BSc, MSc and PhD, respectively. Each group was asked to develop:

- 1) A vision for agribusiness graduate
- 2) Objective of the curriculum
- 3) Competencies required
- 4) Learning objectives
- 5) Entry requirements for the study programme

The framework elaborated for the MSc level is shown in Box 8.3. Based on the recommendations of the workshop, a tracer study of agribusiness graduates was commissioned followed by a validation workshop of the study results held in Zambia in April 2013.

Box 8.3 MSc curriculum framework

Objectives

The agribusiness graduate should be able to:

- Set up and manage agro-based industry and enterprises profitably.
- Apply knowledge and skills in the agribusiness sector, for example, developing and implementing innovative projects.
- Contribute to formulation and implementation of public policies and laws in the agribusiness sector.
- Set up a profitable agribusiness incubation project

Competencies

The agribusiness graduate should be able to:

- Apply good communication skills
- Competently handle human and financial resources management
- Contribute to policy formulation and analysis
- Demonstrate excellent skills in proposal development and implementation
- Develop an agribusiness entity
- Develop bankable business plans
- Establish networks and be a responsible person in an incubator
- Evaluate and monitor agribusiness projects
- Identify agribusiness opportunities
- Possess knowledge of quality management principles and applications
- Show leadership and apply robust negotiation skills
- Have a sound background in agricultural sciences
- Understand business environment and make decisions
- Understand commercial law
- Understand international trade policies and regulations
- Understand value chain analysis
- Undertake informed strategic planning
- Undertake market study/research/survey for agribusiness.

Learning requirements

The following subject areas should be included in the agribusiness programme according to main objectives:

Manage agro-based industry and enterprises:

Agribusiness Management; Agribusiness Research Methodology; Bankable Business Plans; Decision Making; Macro- Micro Economics; Evaluation and Monitoring Agribusiness Projects; Financial Resources Management & Risk Analysis; Human Resources Management; Leadership and Governance; Market Surveys; Strategic Planning; Value Chain Analysis.

Apply knowledge and skills

Academic Writing; Cost Benefit Analysis; Customer Development; Innovative Agribusiness Enterprise; Networking and Knowledge Management; Resource Mobilisation.

Contribute to formulation and implementation of public policies and laws

Agricultural and Agribusiness Policies; Commercial Law; International Trade Policies and Regulations; Policy Simulations.

Set up an agribusiness incubation project

Developing Proposals; Incubation Project; Thesis.

(Source: Report from Agribusiness Curriculum Workshop Mombasa, February 2012)

8.2.3 *The Tracer Study*

A tracer study¹²⁴ of agribusiness graduates was commissioned by ANAFE to assess the relevance of the professional competencies of agribusiness graduates produced within university members of the UniBRAIN consortia countries and to reveal the skills deficits that should be addressed in the curriculum development revision. The study involved a series of individual and focus group interviews involving staff and students in the faculties teaching agricultural disciplines (not only agribusiness) in the UniBRAIN universities in Kenya, Uganda, Ghana, and Zambia as well as other private and public sector AIIC partner representatives. The data was collected through questionnaires, telephone interview, key-informant interviews, and group discussions. A total of 320 respondents who had completed degree courses between 2005 and 2011 in agricultural disciplines were interviewed. The data collected covered the following areas:

- The different programmes and courses in which agribusiness is offered
- Strategies for training agribusinesses
- Linkages of different job placements with courses offered under agribusiness
- The types of employment and job descriptions of agribusiness graduates
- Agribusiness graduates performance in the labour market
- Graduates' linkage with universities where they were trained
- Plans for linkages between current agribusiness students and the AIICs
- The potential role of alumni in student training and agribusiness promotion

The study showed that 85% of the students choose agricultural education in order to obtain employment while 9% envisioned themselves as self-employed. 71% of the graduates obtained employment within the first year after graduation. Independent learning, regular class attendance, and student-teacher interaction were the main sources of learning during the education. Less than 10% of the graduates had started their own business within seven years after graduation but the majority (>70%) got employment in agricultural related organizations.

The tracer study concluded that more emphasis should be placed on experiential learning modes. It also recommended inclusion of courses addressing interdisciplinary skills (e.g., sociology, social studies and soft skills), entrepreneurial skills, financial management, philosophy, and technical aspects of running an agribusiness. It was stressed that students need to be exposed to real working environment in order to be able to conceptualize and recognize agribusiness opportunities in their respective fields of agricultural training. Effectiveness of attachment programs should be enhanced through improved supervision of students during the attachment period. Internships should be integrated as part of the education with a focus on the student's specific field of training. The findings from the study shows that universities need to address

¹²⁴ A tracer study of graduates from the universities involved in the Unibrain consortia in Africa: Linking training of agriculture to agribusiness development. The African Network for Agriculture, Agroforestry and Natural Resources (ANAFE), 2013. Nairobi, Kenya.

critical limitations of graduates including among others: poor entrepreneurial skills, weak critical thinking and analytical skills, poor communication skills, and weak practical skills.

8.2.4 Tracer Study Validation Workshop

The Agribusiness Tracer Study Validation Workshop¹²⁵ was held on 9-10 April 2013 in Mulungushi University, Kabwe, Zambia. A total of 34 participants from Kenya, Uganda, Malawi, Zimbabwe, Ghana, Germany, Serbia, United Kingdom, Nigeria and Zambia participated in the workshop. Participants were drawn from diverse fields including university leadership, lecturers, college principals, BSc, MSc and PhD students, private sector, civil society and agricultural ministries. The workshop had the following three objectives:

- To review the agribusiness tracer study report with a aim to improve its contents
- Achieve consensus on key issues emanating from the tracer study report that needed to be incorporated in the agribusiness curriculum frameworks
- To develop strategic issues for discussion in a policy dialogue

Different stakeholder groups, including students, research organizations, institutional leaders, private sector representatives identified the following key objectives for the curriculum development process:

- Enhance affective and psychomotor competencies as curriculum currently mostly focuses on cognitive aspects. Students need to get out and feel the agribusiness and be more involved in the work
- Make the agricultural area more attractive to the youth
- Enhance practical skills training through the incubation process
- Link the programme with professional bodies for accreditation
- Involve professionals in curriculum delivery
- Nurture linkages between universities and industry

8.2.5 Curriculum Development Workshops

The next step in the curriculum development process was two workshops, one in Nairobi, Kisumu (Kenya) and one in Mulungushi (Zambia). The two workshops addressed:

- Specific training needs taking into account development and environmental needs
- Assessment of the institutional settings
- Estimation of resource requirements for the implementation of the new curriculum
- Identification of the competencies to be developed within the universities

8.2.6 Policy Dialogue

The Tracer Study Validation Workshop identified a set of questions to be addressed in the further agribusiness curriculum reform process by convening a policy dialogue forum. The Dialogue was

¹²⁵ Report of the Agribusiness Tracer Study Validation Workshop held on April 9-10 2013 in Mulungushi University, Kabwe Zambia.

convened as a side event during the FARA Science Week in Accra (Ghana) in July 2013. Here the need for curriculum reforms and modalities for implementing them were discussed. High-level university authorities and policy makers, as well as educators and students participated in the policy dialogue.

8.2.7 Outcome

The final agribusiness curriculum document was published in February 2014. The major change from previous agribusiness curricula was the focus on entrepreneurship and the development of “soft skills” which have traditionally been missing from agribusiness courses (traditional agribusiness courses have had a tendency to be based on economics, with a focus on policy development and advocacy). The curriculum covers the Certificate, Diploma, BSc, MSc and PhD degree levels. By spring 2016, the following universities had implemented the ANAFE curriculum at different levels.

- Rongo University College (BSc level)
- Taita Taveta University College (Certificate, Diploma and BSc levels)
- Strathmore Business School (Master’s level)
- Mulungushi University (Masters and PhD levels)
- Jomo Kenyatta University of Agriculture and Technology (MSc and PhD)

Furthermore, several universities from South, Central and West Africa have expressed interest in implementing the agribusiness curriculum and additional 12 institutions have reviewed their curricula inspired by the framework. Translation of the curriculum to French is critical for wider adoption in Francophone Africa.

All the universities engaged under the UniBRAIN programme have been actively involved in the curriculum development process and the process has led to changes in Mulungushi University in Zambia (AgBIT) and JKUAT in Kenya (SVCDC). At Makerere in Uganda (CURAD), a large-scale revision of the agricultural faculty’s education is initiated and the ANAFE curriculum is used in this process. At Kyambogo University in Uganda (ABP) the curriculum has indirectly contributed to the revision and accreditation of MSc and PhD programmes in Food Processing (Kyambogo University has no agribusiness education programme). At University of Zambia and University of Ghana no changes have yet been made.

Interviewees from the universities argue that curriculum revision typically follows an ‘administrative rhythm’ where a department’s education is revised at a 6 to 10 year interval, depending on the university. It is impossible to change curriculum between the official change processes. But all the remaining UniBRAIN universities argue that they will use the developed curriculum to revise their education when possible. None of the universities were able to produce examples of changes made in the pedagogic design used in existing agricultural or agribusiness courses.

8.3 Agribusiness Internship and Attachment Guide

Curriculum designers, researchers and policymakers have attempted to design curricula which seek to develop a range of capacities that goes beyond training graduates in core academic areas in order to include the formation of new ‘soft’ skills and competences that are necessary to improve employability and entrepreneurial competencies. These skills include a suite of important

thinking and reasoning skills such as the ability to be critical thinkers, to solve problems, to collaborate, to efficiently communicate ideas, use ICT, behave entrepreneurially, and display sociocultural competencies. Yet, traditionally African universities have encountered difficulties in creating the proper support educational ecosystem that fosters the enhancement of these ‘soft’ skills. However, it is generally agreed that such skills cannot be fully developed within the classroom setting and that given the experiential nature of learning, other arenas of society can provide relevant opportunities for their development. The internship programme created by ANAFE is built on these premises.

ANAFE’s internship and attachment programme was started in 2010-2011 when 50 students attached to various agribusiness firms in Kenya and Ghana were monitored by ANAFE. The resulting experiences were subsequently discussed with faculty from JKUAT leading to the publication of ‘A Guide to Agribusiness Internship and Attachment in Sub-Saharan Africa’. The guide outlines the recommended procedures that students should follow when engaging with a business in order to obtain an attachment or internship position.

An internship programme is targeting graduates of higher education institutions who have recently completed their studies. The graduates are typically looking for job, and what to spend the time obtaining practical qualifications. Internship programmes have a duration of between 6 to 12 months. An attachment (or industrial training) programme is targeting students in the 2nd or 3rd year of their BSc education. The guidelines recommend a minimum duration of 8 weeks and two attachments, one in the private sector and one in the public sector.

The guide identifies the requirements that need to be met in order to complete an attachment/internship successfully (see Box 8.4). Finally, the guide describes the roles and obligations to be considered by the students, the businesses, and the university staff in order to support the three parties in developing a successful attachment or internship programme. The guide contains templates for: a) a MoU between the University and host organization; b) the intern’s evaluation of the host organization; c) the lecturer’s evaluation of the intern during the follow-up visit in host organization; d) the intern’s daily activity log; and e) the host organization supervisor’s evaluation of the intern’s daily activity log. The agribusiness internship and attachment programmes are compulsory elements of the new agribusiness curriculum proposed by ANAFE.

The specific internship or attachment modality used by the AIICs depends on their local conditions. The following variants are offered by all the AIICs:

- Internship and attachment in the AIIC administration

Box 8.4 Enabling factors required for successful implementation of the attachment or internship programme

- Motivated and innovative students with a passion for agribusiness
- Competent, experienced, inspiring and willing supervisors (mentors) in the hosting agribusiness enterprise
- Competent, inspiring and dedicated Attachment Coordinators and Supervisors the university/college
- Sustainable and innovative resource mobilisation strategies for implementation of the attachment or internship programme (involving alumni, the university/college, agribusinesses/private sector actors and development partners)

(Source: A Guide to Agribusiness Internship and Attachment in Sub-Saharan Africa)

- Internship and attachment in an incubatees' start-up or in an SME

An attachment organized by the incubator allows the student to obtain practical experience with the different production and managerial functions as well as the general every-day life of an entrepreneurial venture. For example, at CURAD, attachment takes 10 weeks. Students are involved in the following educational activities:

- Interns undergo practical training with guidance of an attachment host
- The development of daily activity schedules by intern
- Field trips where a group of interns visits different attachment hosts
- Monthly meetings to share successes, challenges, and a way of improving the attachment experience
- Interns elaborate a detailed attachment report
- End-of-internship meeting to evaluate internship experience with the participation of the intern, lecturer, and host organization supervisor

Lecturers from the university come to supervise the students during the attachment and CURAD carries out monitoring visits at the attachment location.

The internship at ABP is and scheduled to take 6 months. During the internship, graduates will, depending on their educational background, support the incubatees in different areas such as product design, accounting, business planning, recruitment of staff, etc. CURAD operates an internship programme that targets graduates from all over the Uganda. The students apply to CURAD and in collaboration with NUCAFE the students are briefed on the essence of the internship, what is expected of them, and allocated to farmers and farmer cooperatives in different parts of the country.

Table 8.2 shows the UniBRAIN programme's output in relation to attachments, internships, and Earn as You Learn incubatees. The table also shows how many universities the AIIC has collaborated with regarding these activities.

The lessons learned survey respondents recognize the internship as an important and rewarding activity, as expressed by a graduate: *"Being posted to various firms which were run by entrepreneurs, we received practical lessons on how we can make success in entrepreneurship."* Planning the internship and defining clear objective on the part of all involved parties is recommended. The AIIC should assure regular follow-up on the interns' progress and the students and graduates should have an opportunity to evaluate the experience. In general, the recommendations correspond to the best practices outlined in the ANAFE internship and attachment guidelines.

Table 8.2 Number of internships, attachments and EAYL during 2011-2016.

	ABP	AgBIT	CCLEAR	CURAD	SVCDC
Educational output incubator					
Number of universities involved with the AIIC	2	4	4	-	4
Sponsorships for MSc/BSc/PhD thesis	5 MSc	24 MSc, 1 PhD	-	4	2 MSc, 1 PhD
Students doing internship/attachment in the incubator itself during 2011-2015	256 ¹	210 ¹	27 ¹	77 ¹	26 ¹
Students doing internship/attachment with incubatee start-ups during 2011-2015	-	32	-	195	-
Student attachment facilitated at other organizations (not incubatees) during the project during 2011-2015	20	8	-	20	-
Students enrolled in Earn as You Learn programme during 2011-2015	-	13	-	17 ²	-
Earn as You Learn graduated with established start-up during 2011-2015	1	-	-	-	-
Students starting own businesses	9 ¹		2	8 ¹	-
University graduates employed within 6 months	39	5/26 ¹	-	28/18 ¹	-

Note: ¹Source: Summary of ANAFE Progress under UniBRAIN. ²CURAD report.

8.4 Earn as You Learn Programmes (EAYL)

Three of the six UniBRAIN incubators: SVDC, CURAD and CCLEAR are implementing a form of attachment programme called “Earn as You Learn” for their agriculture and agribusiness students. In this programme the student is supported start to establishing his/her own start-up while learning business skills from the AIIC and also simultaneously completing his/her academic studies at the university.

The EAYL may either emphasize that the participants engage in innovation within existing enterprises or start-ups, or that the students engage more directly in entrepreneurship, for example, by producing and marketing vegetables. Thus, the AIIC may locate students to existing agribusiness firms (factories or companies) in which the incubatees gain the required knowledge and skills through training and mentorship while they are still attending classes at the university. The firm offers the students a modest salary. At CURAD the EAYL programme aims more directly at promoting entrepreneurship among the university students. The students are trained in relevant skills to the modern agribusiness sector that prepare them for self-employment. Students can rent land for crop production from the university and is supported by the incubator to enter into agribusiness. Students are encouraged to enter the programme through the annual entrepreneurship competition - The Innovation Challenge - which identifies innovative business ideas that can then be taken up under the Earn as You Learn programme.

In general, the lessons learned survey responses indicate that the EAYL programmes have been successful in attracting students and that such programmes can be a revenue opportunity for the AIIC. Answers also indicate that some students have struggled with agricultural management problems. It is recommended that supervision (business and agriculture management) should be intense, that students should have prior experience in the area of engagement, and that the AIIC should require cost sharing when funding students’ activities.

8.5 Conclusion

The UniBRAIN project document assigned the following specific responsibilities to ANAFE¹²⁶: in the following we briefly reflect on how ANAFE managed to achieve these objectives.

- 1) Provide performance and quality assurance in respect of the improvement of agribusiness education
- 2) Work with the incubators and associated agribusiness faculty staff in planning and designing improvements to agribusiness courses
- 3) Help ensure that the universities associated with UniBRAIN take optimal advantage of the incubators to improve the agribusiness education that they provide
- 4) Be a knowledge source on the lessons learned by other initiatives for improving agribusiness education
- 5) Raise UniBRAIN impact by disseminating improved agribusiness education products amongst its wider membership and by helping internalising them in non-UniBRAIN universities and colleges

ANAFE has provided a significant result in terms of revised agribusiness curricula for all levels in tertiary education. These curricula provides a basis for improved agribusiness educations across the African continent, but the actual improvement of local agribusiness educations is the responsibility of the national governments and local universities, and beyond the scope of an organization such as ANAFE. Several university representatives have highlighted and acclaimed the published agribusiness curricula and, not the least, the participatory process through which it was developed. This provides social legitimacy to the curriculum and, subsequently, makes it easier to adopt and implement in the universities.

ANAFE's effort has clearly been focused on the programme-wide impact and on the curricula level, whereas we have not observed more detailed collaboration with UniBRAIN universities faculty staff on concrete planning and designing of the didactics of specific course. The degree to which the AIICs were directly involved in improving university courses also seems limited. On the other hand, the internship and attachment programmes seem to have been very successful in most AIICs. UniBRAIN's intention to impact the formal course programme seems very optimistic given the institutional conditions framing university education in Africa. On the other hand, ANAFE has wisely strategized to meet this objective by integrating UniBRAIN and SASACID activities.

ANAFE has visited to the incubators and partner universities to facilitate collaboration and help universities to take advantage of engagement in the AIICs. ANAFE has taken advantage of the goodwill that ANAFE has as a successful and well-known pan-African organization to conduct sensitizing meetings with AIIC partner university leaderships in order to advocate for changes in the agribusiness programmes, notably, they have promoted actively internship, attachment and Earn as You Learn programmes. A relatively large number of university students and graduates

¹²⁶ Unibrain Project Document, p. 23.

have obtained relevant agribusiness sector experience as interns in the AIICs, the incubatee's start-ups or in SMEs collaboration with the AIICs (see Table 7.2).

ANAFE has been an important knowledge source on curriculum development and by leveraging on their project portfolio, including the SIDA-funded SASACID project they have been able to achieve synergy among complementary activities, for example, curriculum development (UniBRAIN) and learning material design (SASACID).

Through the partnership with ANAFE, UniBRAIN has gained direct access to more than 140 universities across Africa and by imbedding the curriculum development within a widely recognized pan-African educational NGO the likelihood that the achievements over time will become institutionalized is much higher than if UniBRAIN had conducted these activities within the programme only. This perspective is of special significance because, as highlighted by several university representatives the universities, formal changes in curriculum take place with a cycle of 5-10 years interval. Expecting significant changes within the 5-years project lifecycle of UniBRAIN would be unrealistic.

9 Comparison of the UniBRAIN Model with Other Types of Incubators

Key Lessons Learned – Comparison with other incubator types

- The tripartite partnership-based UniBRAIN model is a unique organizational construction for an incubator
- The Unibrain model integrates three types of incubators: value chain, commercialization, and technology transfer
- This is likely to constitute a significant challenge in terms of achieving a focus and agreeing on a manageable scope of the incubators
- The AIICs seem to have had challenges identifying more advanced or innovative technological inventions that they realistically could involve in commercializing
- The low-tech domestic rural innovation facilitator seems to be in line with the scope of the UniBRAIN AIICs
- The broad thematic scope (development, education, business development) and partnership-based approach made it difficult for the AIICs to develop a focused business strategy

In this Chapter we compare the UniBRAIN experiences with international experiences from other incubator models. Ideally, we would like to focus on examples of incubators that have been successful in obtaining financial sustainability. This is a difficult task, as we have not been able to encounter scientific research or otherwise independent publications that enable us to draw conclusions regarding achievement of self-sustainability. On the other hand, abundant references exist to models that are funded through grants or endowments. In general, the evidence found is based positive anecdotal descriptions and a detailed comparison is difficult to conduct due to the lack of reliable data.

We find the agribusiness incubators from the InfoDev study presented in Table 2.1 relevant for comparison with the UniBRAIN experiences because they are engaged in the same sector and with similar objectives and several of them are operating in the same type of environments as the UniBRAIN AIICs.

In the InfoDev study a distinction is made between three types of incubators:

- Agribusiness value chain/sector development incubators
- Agribusiness research commercialization incubators
- Technology transfer incubators

The first observation is that the UniBRAIN logic involves all three categories – value chain development, research commercialization and technology transfer. On this backdrop, it seems that the UniBRAIN AIICs already from the outset have embarked on a very challenging task of coping with three fundamentally different types of processes.

The UniBRAIN concept is unique in its emphasis on explicit partnering between university, research organizations and business agents. None of the InfoDev study incubators display this

level of managerial complexity. The three InfoDev categories correspond to the missions of the three UniBRAIN partner types: value chain development aligns with the interests of private businesses, consultancy firms, and NGOs and GO development agencies; the research commercialization incubator corresponds with the universities and research organizations that have novel technology (invention) that they want to commercialize; and lastly, the technology transfer incubators interest in technology diffusion and adoption corresponds to the interest of the national research organizations (NAROs) who constitutes the research partners in the UniBRAIN AIICs. At the conceptual level and in the governance setup, each UniBRAIN incubator contains all the categories defined by the InfoDev study. This is likely to constitute a significant challenge in terms of achieving a focus and agreeing on a manageable scope of the incubators.

If we look more narrowly at the value chain category, the four incubator types identified include:

- Supply chain network manager
- Farm-to-market chain franchisor
- One-stop agribusiness sector developer
- Entire sector incubator and DBS supplier

The two first incubator types (value chain models) are the most business-oriented and probably the two models most likely to achieve self-sustainability over time. The two sector incubator models are both well-funded, organizations of a significant size; they operate in a coordinated manner across the entire value chain; and have been in the sector for a long time. They rely on external funding but operate with a clear business focus and a long-term perspective. The UniBRAIN incubators seem to have been inspired by all these models, but none have yet been successful in establishing a clear business model and operational system pursuing one of the strategies. The value chain-based incubator types seem realistic to establish with the size of funding made available to the AIICs, but the sector incubators require specialized market expertise and institutional linkages, and the de facto two year implementation period was not sufficient for establishing such an operation successfully.

In the research commercialization incubator category three types are identified:

- Agricultural technology-oriented incubators with research centre affiliation
- Business incubator with university affiliation specializing in agribusiness
- Technology-based business incubator

The distinguishing feather in this category is a focus on high-tech and commercialization of inventions. The AIICs seem to have had challenges identifying more advanced or innovative technological inventions that they realistically could involve in commercializing. In general, the technologies addressed were relatively well-known technologies (see Appendix 4) and the primary aim seems to have been to diffuse known rather than support diffusion of entirely new technologies. Moreover, innovation processes involving more advanced technologies are highly uncertain, costly and requires detailed insight into the specific technology, sector, and market. In this category the incubators are typically all publicly-funded and have a long-term perspective. For the universities and research organizations the main purpose is not commercialization as such, but rather to gain social legitimacy by bringing publicly funded inventions into practical use in society.

In the third category, incubators focus on technology transfer. This category includes two types of incubators:

- Low-tech domestic rural innovation facilitators
- High-tech international, transnational strategic alliance

The last type is out of sync with the initial UniBRAIN mission and will not be addressed further. The low-tech domestic rural innovation facilitator, on the other hand, seems to be very much in line with the scope of the UniBRAIN AIICs. The defining features of this type of incubator are:

- Rural low-tech and rural consumer focus
- Links up innovators and entrepreneurs
- Leverages multiple methods for promoting innovation
- Weaver of strong networks
- Visionary and dynamic leadership

If this description is modified to include urban consumers, the scale and scope seem to be relatively well-aligned with the characteristics of the UniBRAIN AIICs. The technology transfer and rural development dimension is aligned with NARO and university missions. The strong focus on graduate and student entrepreneurs fits well with this approach, for example, through the linkage of ABP technology holders with young university graduate entrepreneurs or through the EAYL programmes where students are supported to engage in agricultural production and commercialization.

The overall conclusion of the above comparison of the UniBRAIN incubators to the nine types of agribusiness incubator identified by InfoDev is that the UniBRAIN programme aimed to merge a number of different categories – value chain developer, research commercialization, and technology transfer – into one organization, but with limited recognition of the associated requirements in terms of scale, capital, and in-house competencies. Moreover, the broad thematic scope and partnership-based approach made it difficult for the AIICs to develop a focused strategy that satisfied all involved partners. For example, the focus on unexperienced young graduates would have been suitable for a university-based and funded incubator aiming to enhance its students' opportunities, but seems less suitable for an incubator that is expected to become self-sustainable in a few years. None of the InfoDev incubators have a similar educational mission. Relevant recommendations for addressing the above-mentioned challenges are outlined elsewhere in the report, but in essence incubator designers should:

- Ensure a clear and simple business strategy for the incubator (especially in the start-up phase)
- The strategy must be operationalized through realistic and verified business models
- The strategy and its business models should correspond to the existing and expected future funding opportunities
- The strategy needs to be aligned with the organizational and human capabilities and technical resources available, i.e., the operational system of the AIIC

The challenge is to link these different levels of planning – strategy, business model, and operational system – into a coherent, effective, and flexible system that allows for short-term strategizing to pursue emerging opportunities but without losing sight of the overall objectives and mission.

10 The AAIN – African Agribusiness Incubation Knowledge Centre

Key Lessons Learned – AAIN as African Knowledge Centre

- AAIN meets an existing need for a platform for knowledge sharing and collaboration among the incubation sector stakeholders across Africa
- AAIN can supervise new incubator founders on organizational design and governance principles, especially the pros and cons of the tripartite partnership model versus alternative forms of organization
- AAIN can play an important role by developing best practices and support incubators on how to develop sustainable business models and move from project funding to business-based service provision
- AAIN can service the incubator community by developing a simple, transparent, flexible, effective, and locally adaptable assessment system for incubators and incubatees
- AAIN can play an important role by developing best practices, educational programmes and individualized management training focused on topics such as entrepreneurship supervision and mentorship, business development support, financing, and technology commercialization
- AAIN can support African agribusiness incubators by providing them with a benchmarking system that enable incubators to compare themselves to other incubators on key performance indicators in order to identify areas for potential performance improvement

In this chapter we review the establishment of African Agribusiness Incubator Network (AAIN) and identify the most appropriate roles that AAIN can play in supporting agribusiness incubators in the future.

10.1 The Development and Prospects of AAIN

The upscaling of the UniBRAIN programme experience was an explicit objective outlined in the project document and explicated in Objective #3: Potential for up-scaling. In this chapter we review and discuss the process of sustaining and upscaling the UniBRAIN experience through the establishment of the AAIN as a potential sustainability-enhancer of the UniBRAIN model. We examine how AAIN, with the support of FARA have strategized to promote the agribusiness incubation concept and establish itself as a knowledge centre within agribusiness incubation.

The initiative to form AAIN was taken during the EMRC Forum in Kigali in 2013 as a response to the agribusiness community's demand for a platform for sharing information about agribusiness incubation across Africa. AAIN was officially launched during at Global Forum for Innovators in Agriculture in Abu Dhabi in March 2014 by UniBRAIN and FARA in association with ABI-ICRISAT. The first AAIN conference and general assembly was held in Nairobi, Kenya on 28th-30th September 2015. The conference was attended by 448 delegates from 38 African and 18 non-African countries. During the conference operational guidelines for the organization were discussed and a joint declaration was signed by the participants. Moreover, an interim Board of Advisory Council was formed. AAIN was created as an independent membership organization based on business principles. The mission of AAIN is to enhance the promotion and development of an agribusiness incubation network in Africa through capacity building and communication on

opportunities. AAIN is an association partner of the Global Agri-Business Incubation network. About 46 organizations and individuals obtained membership of AAIN during the conference.

With the prospect of continuing the UniBRAIN activities after the Danida funding ended in March 2016, AAIN was registered as an independent business entity in Ghana in 2014 and in Kenya and Uganda in 2015, thereby complying with the requirements to qualify as an international organization. From 2015 to mid-2016, UniBRAIN has transformed into AAIN. This transformation has involved the following activities:

- Repositioning UniBRAIN staff into the new AAIN structure
- Development of administrative policies and systems
- Intensification of membership recruitment and business partnerships/networks
- Branding and promotion of AAIN as a private sector arm of FARA
- Resource mobilization and business development
- Renewal of agreements with UniBRAIN programme partners based on refocusing on a demand-driven approach and financially sustainability model
- Appointment of a Board of Trustees for the period of 2016-2020
- Development of new partnerships agreements between AAIN and the existing incubators previously served by UniBRAIN
- Development of communication and branding strategy, resource mobilization strategy, and member service plan
- Development of a financing facility for incubators (AAIF)
- Providing incubation services and facilitation to the 11 UniBRAIN and MOFEPI incubators
- Development of business incubation tools and standards for the UniBRAIN model
- Development of user friendly business incubation M&E system for AAIN members
- Capacity building of AAIN BoD and management in business modelling and incubation

Several new incubators use the UniBRAIN model. The upscaling of agribusiness incubation based on the UniBRAIN model was initiated in 2014 with the UniBRAIN Facility's involvement in the establishment of five Food Processing Business Incubation Centres funded by the Government of India, the establishment of a dairy incubation centre funded by Wageningen University at Egerton University in Kenya, and the Entrepreneurship for Commercial Seed Incubation Business (ECoSIB) in Ghana funded by AGRA are initiatives with the involvement of AAIN. The Mali Agribusiness Incubation Hub (MAIH), partly funded by Africa Rice Centre in Benin, is also based on the UniBRAIN model's principles. According to the UniBRAIN programme completion report, several other incubator consortia are in the process of being established, including five under consideration for funding by AGRA and five additional considered by the Government of Ghana.

Several international development organizations are involved in support to new agribusiness incubator and entrepreneurship initiatives. The African Development Bank (AfDB), in collaboration with the International Institute of Tropical Agriculture (IITA), has initiated a programme labelled the ENABLE programme (Empowering Novel Agri-Business-Led Employment) to empower youth on the continent. AAIN through FARA has been appointed as a technical partners involved in providing assistance on the establishment of agribusiness

incubators.¹²⁷ As previously mentioned, both AGRA and the Government of India are also involved in promoting the UniBRAIN model through new AAIN supported incubators.

AAIN has also been able to establish several new or further develop already existing UniBRAIN partnerships. For example, AAIN and the Acumen Fund¹²⁸ have agreed to collaborate on several areas to support agribusiness development in Africa, for example, to develop equity investment opportunities, innovative financing models, support for pre-investment activities, and establishment of a finance pipeline for emerging companies from AAIN incubators. Other partnerships include African Institute for Capacity Development, Avalan Blanch and Grand BK, Egerton University, HAMK Häme University of Applied Sciences in Finland, Self Help Africa, Uganda Industrial Research Institute, and African Agriculture Technology Foundation. These partnerships serve a range of purposes such as provision of in-kind support, joint resource mobilization, technical backstopping, capacity development and training, and joint product development.

Recently (2016) AAIN launched the Incubator of Incubators Centre of Excellence (IICE) as part of their strategy to handle agribusiness incubation business. The Centre is a one-stop-shop that will offer services to support:

- Establishment, promotion and enhancement of agribusiness incubators
- Evaluation of technology and design of cutting edge commercialization strategies
- Development of foresight and marketing for technology adoption, and global market access and penetration

AAIN is emerging in an institutional environment where project thinking is the universal norm. The IICE will support the transformation of AAIN from a project to a business organization. This transformation may be difficult without very clear identity and symbols that highlight the shift in management logic.

At the overall policy level, the AAIN has become anchored within the African Union's Development Agenda by becoming a flagship within Science Agenda for Agriculture in Africa¹²⁹ (S3A) and thus a technical implementation tool in the African Union's Comprehensive Africa Agriculture Development Programme (CAADP) policy framework. CAADP presents the African Union's (AU) visions for agricultural development in Africa. CAADP focuses on improving food security, nutrition, and increasing incomes in Africa's largely farming based economies. This is achieved through four priority investment areas, or pillars, of which pillar four "agricultural

¹²⁷ Youth in Agribusiness within an African Agricultural Transformation Agenda. See: http://www.afdb.org/fileadmin/uploads/afdb/Documents/Events/DakAgri2015/Youth_in_Agribusiness_within_an_African_Agricultural_Transformation_Agenda.pdf.

¹²⁸ The Acumen Fund raises charitable donations to invest in companies, leaders, and ideas that are changing the way the world tackles poverty.

¹²⁹ The Science Agenda for Agriculture in Africa (S3A) is an African-owned and African-led process that articulates the science, technology, extension, innovations, policy and social learning that Africa needs to apply in order to meet its agricultural and overall development goals. See: http://faraafrica.org/wp-content/uploads/2015/04/English_Science_agenda_for_agr_in_Africa.pdf.

research, technology dissemination and adoption” is coordinated by FARA. CAADP places emphasis on market access and the role of the private sector in the creation of jobs and increased incomes. The UniBRAIN programme has been a useful model for illustrating the value of creating public-private partnerships between universities, research organizations and the private agribusiness sector and this modality is well aligned with recent policy developments in the agricultural sector. On this backdrop, the UniBRAIN model has attracted attention at a high level in, for example, AU, African Development Bank and AGRA.

In terms of leveraging the Danida funding, UniBRAIN has already from 2013 strategized successfully and been able to attract funding from the Government of India, AGRA and Africa Rice Center to establish seven incubators. By mid-2016 several proposals for establishing additional incubators were submitted for funding by the African Development Fund, USAID, DFID and others (total funding applied for constituted USD 1.9 million)¹³⁰.

With the finalization of the Danida funding by March 2016, AAIN was transformed into a membership-based, non-profit, but business-oriented organization that aims to achieve financial sustainability based on fees from providing agribusiness incubation services. AAINs main offices are housed by FARA in Accra and regional offices are located in Uganda and Kenya. To achieve its objectives, AAIN is structuring operational procedures and policies, recruiting staff and developing a business strategy for 2017-2022¹³¹. Figure 10.1 illustrates the AAIN business approach.

The six business areas that AAIN will focus on include:

- Business Development and Incubation (BDI)
- Youth Employment Programme (YEP)
- Mentorship Programme (MP)
- Membership Service and Capacity Development (MSCD)
- Agribusiness Education and Technology Transfer (AETT)
- African Agribusiness Incubation Fund (AAIF)

By June 2016, AAIN had 80 registered members and the AAIN mentor network had enrolled 108 trained mentors able to support incubators in Africa. On this basis, and drawing on the programme and AIIC level experiences and tools developed during the UniBRAIN programme, AAIN has today successfully established itself as a knowledge centre within agribusiness incubation in Africa.

¹³⁰ From UniBRAIN to Africa Agribusiness Incubator Network (AAIN), the Journey 2012-2016: Programme Completion Report. 2016. FARA, p. 25.

¹³¹ Ibid, p. 24.

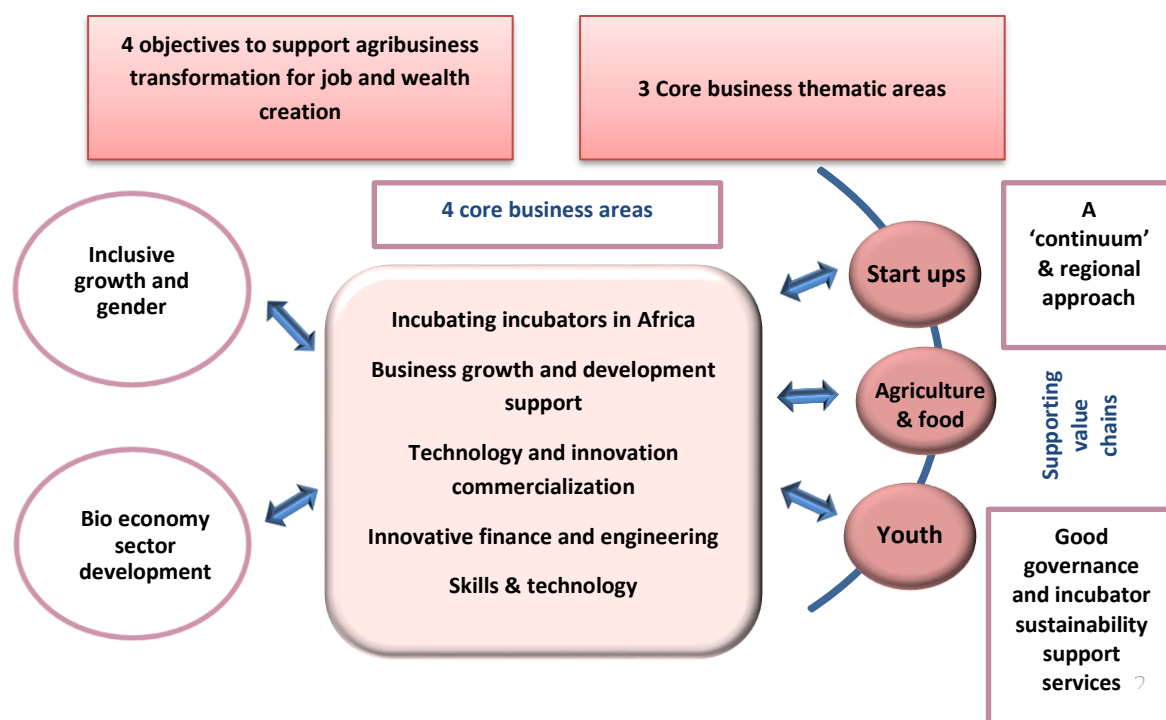


Figure 10.1 AAIN business agenda 2016-2020.¹³²

10.2 AAIN as Agribusiness Incubation Knowledge Centre

AAIN can play several roles in the future for several reasons:

- AAIN constitutes a network of incubators that facilitates knowledge exchange and collaboration across its membership and with the international entrepreneurship ecosystem
- Through FARA and similar agencies, AAIN play a role in advocacy of promoting incubation in African policy processes targeting agricultural and agribusiness development
- AAIN and its partnership network can support member organizations and individuals in mobilizing political support and financial resources for launching new agribusiness incubators
- As a pan-African knowledge centre, AAIN can support the management of African agribusiness incubators based on best practices and the lessons learned

¹³² Figure 10.1 is based on information provided by AAIN CEO Alex Ariho in January 2016.

Here we will focus on the last dimension: the role as a knowledge centre supporting the formation and operation of agribusiness incubators, a role that seems to have been ascribed to the Incubator of Incubators Centre of Excellence.

An EU report¹³³ recommended that professionalization of the incubation sector should focus on four specific areas:

- Benchmarking and best practice sharing should focus on the four key incubator service areas identified in this report – entrepreneur training, business support, financing, and technology support
- Business incubators should be encouraged to periodically undertake impacts assessments
- A further priority should be for business incubators to reduce their dependence on public subsidies
- There is a need to ‘professionalize’ the occupation of business incubator management

These recommendations correspond with the areas of importance and potential for development identified in this lessons learned report and we believe that they could play an adequate foundation for the design of AAIN’s future service provision. Moreover, we want to add one area that has played a significant importance in the UniBRAIN model.

- Partnership formation and management should be a focal point for best practices sharing and professionalization

10.2.1 Best Practices on Partnership

The UniBRAIN achievements and the ongoing transformation of UniBRAIN into AAIN is remarkable and a unique result in the development sector. The partnership model used by UniBRAIN has proven successful, although also not without challenges. Especially the collaboration with ANAFE and ABI-ICRISAT illustrates the potential of successful partnering at the programme level. Fundamental to successful partnering is that the collaboration results in synergies add value to all partners. AAIN has a rich experience base to draw from when supporting future partnership formation. Partnerships should promote all the partners’ own objectives as was the case in several of the AIICs. AAIN has substantial experience with constructive as well as less successful partnership constellations that can inform future AIIC-level partnership formation, for example, in relation to the importance of a thorough partner selection process and establishment of exit modalities to enable easy partner exit from the partnership. The tripartite UniBRAIN model that unites university, research organizations, and business partners is an intriguing but also challenging construction. This constellation may not necessarily be the best starting point for all new incubators but could also constitute a strategic goal for a more established and organizationally matured incubator. Similarly, the degree of partnership may also vary in different contexts. The UniBRAIN experiences show that misalignment of the partners’ perception of an adequate ‘degree of partnership’ may cause operational inefficiency. Some

¹³³ Centre for Strategy & Evaluation Services (CSES) (2002). Benchmarking of Business Incubators. Final Report. The European Commission’s Enterprise DG, Brussels.

incubators may be better advised to involve other partnership categories (e.g., university or research organizations) as collaborators and service providers rather than as partners. In general, it seems that AAIN can play an important role in advising new incubators on the pros and cons of partnership formation and management, and the advantages of partnerships versus other organizational forms while focusing on how to achieve the synergies and business opportunities associated with the triple helix concept underlying the UniBRAIN model.

10.2.2 Best Practices on Independence of Public Subsidies

The ambitious and challenging goal of the UniBRAIN programme to transform from a donor-funded project to financial reliance on sustainable business operations within a four-year horizon has provided the UniBRAIN Facility and the AIICs with first hand practical experience in how challenging the process of achieving independence from public or donor funding can be. This constitutes an invaluable experience and basis for advising future incubators in how to achieve self-sustainability within a reasonable time frame. Central lessons learned in this regard includes: a) the need for business orientation, i.e., avoiding the trap of applying a ‘project logic’ during an incubator’s operational phase, b) the ability to design realistic and viable business models that facilitates the transformation to financial sustainability, c) the need to be locally embedded and customer-oriented, and d) the ability to establish a clear strategic framework for sustainability but also be able to act effectual and opportunity exploiting within this framework. Both at the UniBRAIN and AIIC level examples of how to deal with these challenges in practice are abundant and provide an excellent basis for upscaling experiences.

10.2.3 Best Practices on Assessment

Assessment of incubation outcomes, and ideally also impact, is important for several reasons. Assessment documents the benefits of public support and provides a source for redirecting less effective or inefficient practices or suboptimal objectives. Moreover, credible assessment provides a means of legitimizing and marketing the incubator towards customers, donors, and partners. But proper assessment constitutes a significant methodological challenge as it has been demonstrated by the UniBRAIN programme. AAIN can play a very important role by elaborating an effective, transparent and flexible assessment tool that enables incubators to conduct self-assessment of the incubator’s operations as well as offers enrolled incubatees a means of assessing their own performance. It is highly recommended that the development of an M&E tool that can provide the basis for the assessment is developed in a participatory mode, involving both incubators and incubatees to ensure relevance and overcome methodological and technical barriers to implementation and use.

10.2.4 Best Practices and Benchmarking of Incubation Services

Sharing knowledge on key incubation service areas such as entrepreneur training, business support, financing, and technology support is the core business opportunity for AAIN. Delivering on each of these core service areas has shown to be challenging and standard textbook solutions are likely to provide superficial guidance only. The general knowledge of business incubation is limited in Africa and the number of professionals with actual experience in business incubation or business development services is very limited. On this backdrop, regular training courses, on-the-job-training and supervision, and mentoring and advisory services are likely services to be demanded by the sector.

Providing credible services require elaboration of professional tangible training materials, but even more importantly, the human capital to translate the generic training material to local contexts. The UniBRAIN programme has shown that providing generic knowledge and advice without the ability to contextualize and translate this knowledge into specific local conditions is less supportive for achieving sustainability. At the same time, providing these services professionally and supporting implementation is time consuming and expensive because it requires long-term and continuous engagement. Finding a suitable business model for this service provision will be challenging and it is most likely that donor sponsorship will constitute the most likely source of funding also in the near future.

One of the important lessons learned is that the opportunity to learn from peers, for example, as AIIC CEOs did when visiting each other's incubators, is a very important mechanism. This form of informal 'benchmarking', i.e., comparison yourself with your peers, is one out of several ways of communicating best practices. AAIN should aim to establish an assessment system that enables individual incubators to anonymously benchmark themselves and key performance indicators with the other AAIN members in similar categories.

Finally, we want to remind our readers that it is easy to state and conceptually grasp 'best practices', but, first, what is best in one situation may not be best in a different context, and, second, and more importantly – 'the devil is in the details' – for example, there is a long way from understanding the need for and sketching out a business model to actually implementing one that is viable in practice.

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Business Incubation Toolkit - iDISC Incubation Good Practice. InfoDev. (The Business Incubation Toolkit is the world's one-stop shop for know-how on business incubation, a step-by-step guide for incubation managers along the entire journey of launching a business enabler, securing funding, finding partners, attracting innovators, connecting them with investors, and more). Available at: <http://www.infodev.org/business-incubation-toolkit>

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Appendix 1: Number of Stakeholders Interviewed for the Lessons Learned Study

The list contains an overview of the categories of UniBRAIN programme participants and stakeholders interviewed at each AIIC by the consultants during January to March 2016.

	ABP	AgBIT	CLEAR	CURAD	SVCDC	WAARI
Interview categories						
AIIC chair person	1	1	1	1		
Incubator's CEO	1	1	1	1	1	1
Incubator staff	5	2	5		3	
Consortia members representatives						
University	1	2	3	2	2	2
Research organization		1	2	1	1	4
Private business		1			3	1
Government agency/institution	1	4	1			
NGO			1	1		
Graduate students representatives						
That are interns at the incubator	5	4	2	4	1	
That have started businesses with support	1		2	5	3	
That have participated in improved agribusiness education						
Incubatees						
On-site located at the incubator facility	6		2			
Off-site enrolled incubatees			1		3	
Private sector						
Business mentor	1					
Existing SMEs receiving AIIC services	1	3	2			
Commercial farmers (households, groups, associations)	1	2	1			
Supply chain managers						1
Private sector trade/producer association			1			
Private firm engaged with the incubator		2		1		
Bank/finance institution	1					
Employer of former interns in the AIIC					1	
Government representative at relevant levels						
Departmental level			1			
National operational level			4	1		
Policy formulation level				1		1
National Agricultural Research Organization (NARO)	1	1	1	1		1
Non-governmental organizations						
CBO/NGO – collaborating with the AIIC (service providers, or customers)		1	2	2	3	
Development partners						2
Regional institutions						
Regional economic body						
Total interviewees	26	25	31	21	21	13

Appendix 2: Results of Incubator Needs Assessment

The table shows the result of a survey conducted among UniBRAIN agribusiness incubator managers that was designed to capture their assessments of the range and nature of support that they will require in establishing their agribusiness incubation businesses. The listed categories represent the potential services provided by the UniBRAIN partners. (Source: Appendix 11 in UniBRAIN Programme Document - Implementation Phase)

Client services offered	Rank
The responses to questions concerning infrastructure were ranked:	
• Creating an AIICs reference guide for operating incubators	6
• Creating a platform for facilitating funding for start-up agribusiness	6
• Creating a platform for an agribusiness of mentors' network	5
• Guidance on refining the business plan and business model	4
• Creating a databank of indigenous agro-technologies ready for commercialization (Standardized AIICs Technology Screening Process and profiling)	4
• Identification of international agro technologies suitable in African context	2
• Facilitation of recruitment of key AIIC staff	1
The responses to questions concerning process support were ranked:	
• Capacity building/ training programme of business incubator managers on new initiatives and approaches in agribusiness incubation	6
• Co-marketing under common branding; UniBRAIN AIICs - communication materials, marketing kits, displays, exhibitions	6
• Operating a business incubator network through website management	6
• National conference on agribusiness incubation	6
• Mentoring and guidance of business incubation through direct visits and annual meetings	5
• Promotion of agri-business incubation/ nationally through co-business incubation	4
• Publicity (press/media)	4
• Agribusiness information call centre- Help desk and direct marketing	4

Appendix 3: Lessons Learned Reported in Annual Reports

<p>Lessons learned in UniBRAIN Annual Report 2011</p> <ul style="list-style-type: none"> • Institutional incompatibilities hampered the progress of the initiative from the outset. This indicated the importance of conducting due diligence before partnerships are formed. Ultimately UniBRAIN's partnership was amended to retain only institutions that were compatible with each other. This has been an important lesson that should be taken on board by the incubator consortia to ensure their compatibility, as they forge the novel three-way partnerships between research, universities and business. • A number of activities planned by UniBRAIN, including those by partners and incubators, were not accomplished due to late contracting and release of funds, arising in part from late submission and approval of reports by partners. Given that partners have their own organizational obligations, care must be taken to plan annual activities with them in a timely manner in order to avoid embarking on over-ambitious plans. • Plans also need to be realistic in view of the intricate establishment procedures that incubators have to complete. Careful attention to detail now will forestall problems in future during implementation. <p>Foreseen issues that need to be addressed include:</p> <ul style="list-style-type: none"> • The need to find experienced managers for the incubators, which will be difficult given the lack of experience of the consortia and the limited pool of experienced incubator managers in the host countries. • There is need for improved communication on financial issues so that all parties will know exactly what is required and will be sure that decisions once made will not later be found to have contravened any rule or financial standard. This will be even more necessary in the implementation phase as the six new agribusiness entities start to operate with significant sums of money that they will themselves be investing in inexperienced incubatees. • The need for a more streamlined, quicker and more flexible system for decision making in the FARA Secretariat; and • Getting office accommodation and administrative support for the Technical Coordinator in Nairobi so that s/he will be able to focus more on providing coordination and less on administrative duties and to enable the Technical Coordinator to host meetings in the name of FARA and not always be dependent on the Partners' consideration and facilities.
<p>Lessons learned in UniBRAIN Annual Report 2012</p> <ul style="list-style-type: none"> • The founding principle of UniBRAIN is partnerships between universities, research and business. It has shown to be challenging to get such diverse institutions to collaborate effectively and efficiently. It takes time to develop the required trust and harmony, lack of which can frustrate the meeting of otherwise easily achievable deadlines. Decisions that are quickly made in business tend to follow long bureaucratic routes in other institutions. The result was that in maintaining the principle of quality before speed in decision making, UniBRAIN was overly optimistic in its estimation of how long it would take to institutionalize incubators as independent businesses. • Another factor that has contributed to delayed institutionalization of incubators is the dependence on inexperienced and already busy consortia members (i.e., AIIC partners) to complete the establishment processes. All individuals from the consortium members had full time jobs and because they could not devote their time fully to completing the process they shared tasks, with inevitable opportunities for confusion, resulting in the waste of time. [Thus], consortia should be enabled to procure professional help in properly establishing their businesses and governance. The partners' and incubators' meeting in August (2012) revealed that there was still a lack of sufficient understanding among the partners and Consortia about their reporting and other requirements. Actions taken during this meeting to streamline the work-planning and budgeting process have shown that coordinated planning, with clear knowledge and adherence to guidelines can greatly enhance timely implementation of planned activities. A lot still remains to be done in this area.

Lessons learned in UniBRAIN Annual Report 2014-2015
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| <ul style="list-style-type: none">• The UniBRAIN model is a laudable model as evidenced by the wide interest it has generated. However, while the founding principle is that the model is a partnership between at least three kinds of partners - research, business and universities/tertiary institutions - what is evolving is that the specifics need to be fleshed out in advance on exit strategies of non-performing partners.• As business entities, incubators should run on cost recovery basis and partners should be entertained based on their performance. Incubators can therefore not be bogged down with relationships based on entitlements. This will be critical in the near future with incubators required to work towards sustainability.• While the basics of the framework for formation of an incubator based on the UniBRAIN model are kept intact, it may be necessary to modify the model based on the socio-economic environment in the country the incubator is setting up. “One size fits all” may not work everywhere. Additionally, there is no once-for-all fix and emerging issues will need to be addressed on an on-going basis, given that UniBRAIN is a unique model.• Emerging business opportunities in 2014 and the strides incubators made to seize those opportunities is a clear testimony that had incubators earlier focused on income generation rather than just spending grant money; a lot of ground would have been gained towards sustainability. Going forward, sustainability plans need to be part of implementation from the outset of implementation. |
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Appendix 4: Technologies for Commercialization by Incubatees and SMEs

Technologies available for commercialization by graduate and SMEs incubatees in the UniBRAIN Programme's AIICs.

Technologies available for commercialization
WAARI
Cashew processing
Mango/nectar production
Pre-cooked Fonio
Sebe nectar
SVCDC
Sorghum beer
Sorghum wine
Animal feed production
Improved sorghum crop varieties/hybrids
Bioethanol from sweet sorghum
Biomass cooking stove (jiko)
Sorghum beverage
Sorghum composite flour
Sorghum-based baking products (cookies, bread and biscuits)
Charcoal briquettes
Purdue University crop storage bags
CURAD
Natural coffee sweetener (Stevia)
Tea nursery: tea multiplication
Essential oils: production and extraction of oil (Rose Geranium and Lemon Balm)
Coffee clones technology (Coffee Wilt Disease free seedlings)
Coffee liquor production
Indigenous microorganisms (IMO) pick breeding
Wet processing of coffee
Nursery and coffee seed multiplication technologies
Mushroom spawn production
Roasting and coffee packaging technologies
Farmer ownership model (cooperative management model)
Tea seedling multiplication technology
Tractor hire services
Ginger seed multiplication
Coffee ice cream
Mobile operated electronic egg incubator
CCLEAR
Agro-industrial bi-products
Poultry breed
Indigenous microorganisms (IMO) pick breeding
Pelletized grasscutter feed
AgBIT
Improved cassava processing
Organic vegetable production
Rootstock-Scion Compatibility protocol

Technologies available for commercialization

Spot fertilizer applicator
Lycopene extraction from tomato
Low cost post-harvest management (cold chain management) technologies
Mushroom production and processing, especially focusing on women entrepreneurs
Low cost drip irrigation systems suitable for small-scale farmers
Greenhouse technologies for high value horticulture production

ABP

Banana juice
Banana charcoal briquettes
Banana wine
Fresh vacuum sealed matooke
Banana fibre/textiles
Tissue culture banana
Biodegradable bags

Appendix 5: Major Challenges and Lessons Learned Identified by AIIC CEOs

The list contains the challenges and lessons learned identified in the lessons learned workshops conducted as part of the consultancy during January to March 2016.

Challenge and lessons learned
ABP
Success of incubation lies in effective business mentorship
UniBRAIN model is ideal for commercialization of innovations from universities
Handholding support from partners strengthened the incubator
Product certification is key to development of successful businesses
High expectations from incubatees
Low quality package materials
Curriculum review not successfully done
Incubatee production spaces cannot meet required standards
Product certification with UNBS
AgBIT
Focus on fewer value chains is better for higher quality delivery of service
A few well selected incubatees will result in higher impact (20 per year)
For the farmer entrepreneurs/producers value-chain based clustering gives better impact (40 farmers per cluster optimal)
The “non-profit” tag is a negative incentive for customers to willingly pay for incubation services
For sustainability, incubators need to internally generate revenues (e.g. consultancy, training, production unit, marketing)
However, delivery of business incubation services needs to be supported with financing to SMEs to be sustainable
Full self-sustainability of an incubator cannot easily be attained in a period of less than 5 years as the concept of business incubation is relatively new (development financing required)
A balance between for-profit and non-profit is difficult to achieve. However, non-profit incubators need to have clear for-profit ventures in order to generate resources to support non-profit ends
For better success of business incubation, it is important to work with incubatees who already identify as entrepreneurs
Entrepreneur scouting needs to be more robust
Location of incubator is very important -> Poor location – difficult access – less customers/incubatees
Engaging more with various organs of the universities and research institutions is key to building better links between incubators, scientists, researchers and the private sector
Incubators need additional financing and better engagement with the private sector in order to successfully commercialize “on-shelf” prototypes/innovations
Next phase
Focus on a few value chains (horticulture, poultry, aquaculture)
Focus on young people
Streamlining teams dedicated to specific value chains
Mobilizing resources (directly or through private sector partnerships) to capitalize supported incubatees is critical
Increased engagement with universities and research institutions at various levels
CCLEAR
Better understanding of Business model by all
All consortia partners and board all have a common understanding of business model
High expectations on the part of donors
High expectations on the part of incubatees
No initial credit facility for incubatees
Risk Insurance for all bootstrap
Linkage to other facilities in the ecosystem

Challenge and lessons learned

CURAD

Managing change and uncertain financial dynamics

Open communication between partners, board and management for a streamlined and efficient operations

Need for streamlined and clear fund release policies. Preferably bi-annual release of funds vs quarterly release by grant providers

Stronger focused efforts to attract and grow female candidates for incubation

Overwhelming need for incubation versus few staff - appropriate staff contingent essential

Need for effective sustainability model with IGR, private sector support and continued grant fund.

Less reliability on a single customer for agri entrepreneurs and more reliance on, for example, the government as buyer of incubatee products.

Production infrastructure for incubatees is essential - Namanve Park

Revolving fund crucial in incubation

Full sustainability not achieved in 4 years - Only 2 years of full activity and mid-term funds reductions. Clarity of funding terms and period essential for proper planning

Challenges in revolving funds management due to the risky nature of start-up funding support. This has to be costed in operations and buffered by partner support or grant funding

SVCDC

Need to strengthen incubatee selection process

Partnerships key in incubation and sustainability

Incubators needs to strengthen institutional capacity in order to attract more funding

Make interns recruitment competitive

SVCDC to strategize in other ways of sourcing revenue

Appendix 6: Due Diligence Process Requirements (2012)

The requirements outlined in the Due Diligence process conducted during the fall of 2012. To ensure release of the funding for initiating the implementation phase the AIICs was conditional on compliance with the below requirements:

- Develop consortium articles of association, agreements between the AIIC members in respect of governance, management decision-making structures, etc. in the form of memorandum of understanding or shareholder agreement.
- Develop and finalize agreements between the incubator and their respective AIIC members. This included, among other things, intellectual property rights (IPR) protection, procedures for accessing the human resources of the members and what the members would charge the incubator for using these, and payment for facilities, due diligence, etc.
- Develop the governance structure of the incubator which had to be confirmed by the incubator's competent authority
- Ensure approval of the revised business plan by the incubators competent authority, the business model, plans and budgets for 2012 also had to be refined and approved by the competent authority
- Open two dedicated bank accounts, i.e., one for UniBRAIN funds and another for internally generated revenues
- Establish the financial management system, which had to be approved by the incubator's competent authority. These would, as a minimum include roles and responsibilities, planning and budgeting, reporting, accounting and audit systems and payments, asset management (bank, cash and advances), fixed assets, payrolls procurement, financial statement close process, including external audit.

Appendix 7: Inception and Start-Up Phase Lessons Learned

The revised Programme Document for the UniBRAIN Implementation Phase (January 2012-December 2015) outlined a number of lessons learned during the inception and start-up phases. These lessons learned are summarized in the list below:

- The original concept of university-led AIICs was adjusted leaving it to the consortia to determine their leadership.
- The need for more clarity in the objectives and outputs was recognized which led to a more clear definition of objectives and outcomes.
- Difficulties in team work [in the AIICs] provided a valuable lesson on the need for teams to, not only be comprised of institutions with the right mix of skills, experiences and capacities, but also to have members that are *institutionally compatible* with one another so that they can function seamlessly with each adding value to the other.
- The composition of the UniBRAIN programme partnership has been amended to include essential skills and experience in establishing successful agribusiness incubators to form a team of compatible institutions.
- It is recognized that the incubators must be autonomous businesses that can be managed with best business practices by professional managers.
- The selection of incubatees should ensure that they have not just the technical qualifications, but also the ambition and determination to succeed and grow. Incubatees who are likely to become dependent on their incubator should be avoided.
- FARA has well-developed operational and financial management systems and procedures, but with a focus on control - thus focusing on bureaucratic requirements. However, lessons from the inception and start up phases indicated the need for the UniBRAIN partners and FARA to adopt a more agile and responsive arrangement that is conducive for a business environment. This will require the change from the traditional project-oriented management style to one in which more authority is devolved to the AIIC level.
- The importance of effective mentorship was stressed with incentives and follow up guidance for both the mentors and mentees.
- The need for a customised information system that can provide 24/7 information was recognised as an essential complement to enabling the UniBRAIN public-private partnership to function with the necessary combination of commercial flexibility, transparency and accountability.

Appendix 8: Summary of UCPH Lessons Learned Rapport 2012

Key themes and associated discussion questions from Report to the UniBRAIN Agribusiness Innovation Incubator Consortia based on UCPH roundtrip to Ghana, Kenya, Uganda and Zambia during October/November 2012. The report summarizes the main topics and concerns that have been discussed with AIIC partners during the visits.

Key themes and associated discussion question

The incubation process

a) Diversity vs. quality:

- How broad a service offer and customer base can the incubator attend while at the same time provide the required quality and attention to each customer segment?

b) For-profit will finance non-profit services:

- Will the incubator be able to generate the necessary profit and devote the necessary management attention to develop quality non-profit services while simultaneously engaged in for-profit service provision

c) Commercial vs. non-commercial activities:

- What is the right balance between for-profit participation in commercial activities and more limited revenue-generation classical incubation activities (e.g. support to individual graduate entrepreneurs and SME) that can ensure long-term economic sustainable of the incubator?
- Can the incubators make sure that commercial activities and mentoring/supervision of entrepreneurs are balanced?

d) Entrepreneurial vs. managerial mindset:

- How can incubatees be introduced to a well-defined business concept, while attention is still paid to the development of entrepreneurial competencies and attitudes?
- Can the incubators design a service mix that accommodates the needs of both incubatees that prefer to develop individual business concepts and those that engage in a more predefined business model?

e) Motivated by own vs. somebody else idea:

- What is the right balance between providing relatively predefined business solution and supporting entrepreneurs in developing their own solutions?

f) Growth businesses vs. job seekers:

- How do the incubator ensure that incubatees are genuine 'growth business' entrepreneurs and not just 'employment seekers' that drain the AIICs for resources without creating additional value?

g) Planning vs. action:

- How will AIICs support their incubatees in finding an adequate balance between causation and effectuation that allows for rational decision making and simultaneously emphasise action and risk taking?

h) University/research vs. business environment:

- Will the physical location of the incubator facility influence the efficiency?
- While becoming independent commercial organizations, how can the AIICs then at the same time ensure that they remain well anchored within the participating organizations and that they maintain strong links to involved scientists and researchers?

i) Mentor motivation:

- Will payment of mentors for mentoring incubatees influence the relationship between the mentors and mentees or/and the support provided by the mentor?

Curriculum development

- What is an appropriate outcome focus and what are the required behavioural competencies that produce agribusiness entrepreneurs and innovators?
- How can AIIC experiences support a range of different learning outcomes in higher education?
- What kind of formal and informal changes can be implemented to enhance agribusiness students' entrepreneurial mindset, and what will be the barriers and facilitators of such changes?
- To what extent is cross-departmental collaboration between staffs and between students possible, and how can this contribute to enhance the agribusiness students' entrepreneurial mindset?

Partnerships and networks

- To what extent will the incubator enterprises be able to benefit from the competencies and resources available within the partnership, and what processes and mechanisms will support an effective collaboration?
- How will individual partner networks be utilized to support incubatees and incubator activities and how will incubator managers be able to benefit from partners' network?

Appendix 9: UniBRAIN Documents Reviewed

ANAFE

- Synthesis of Outcome of Visits to the UniBRAIN Consortia October 2012 (Annex 12). ANAFE, 2012.
- ANAFE Annual Report 2013. ANAFE, 2013.
- Graduates from the universities involved in the UniBRAIN consortia in Africa (Annex 2). ANAFE, 2013.
- Report of the Agribusiness Tracer Study Validation Workshop held on 9th and 10th April 2013 in Mulungushi University, Kabwe Zambia (Annex 4). ANAFE, 2013.
- Piloting of the BSc Agribusiness Curriculum Framework in Rongo University College (RUC) (Annex 6). ANAFE, 2013.
- Agribusiness Education Fair: Making Tertiary Agricultural Education and Research more Relevant to Business in Africa. World Agroforestry Centre, Nairobi, Kenya, October 10th-12th 2013. (Annex 8). ANAFE, 2013.
- Agribusiness Curriculum Framework – BSc, MSc and PhD. ANAFE, 2014.
- Agribusiness Development and Managing Risk and Uncertainty in African Agriculture. The Role of Tertiary Agricultural Education Proceedings of an International Symposium, Yaounde, Cameroon 25th 28th August 2014. ANAFE, 2014.
- Report on the Development of Agribusiness Attachment and Internship Guide (Annex 13). ANAFE, 2014.
- Draft Report of Side-Event (Report of Side Event on Neglected and Underutilized Species (NUS) of Crops, Trees, and Animals: Food/Nutrition Diversity and Business Potential. Held During African Agri-Business Incubation Conference & Expo 2015. Kenyatta International Convention Centre (KICC), Nairobi Kenya), 29th September, 2015 (Annex 17). ANAFE, 2015.
- Final Report on UniBRAIN Agribusiness Policy Study (Agribusiness Policy Framework for Sub-Saharan Africa: Seeking the Balance and Consensus) (Annex 18). ANAFE, 2015.
- Report from the Meeting with Rongo University College to Capture Feedback on Curriculum Implementation (Annex 19). ANAFE, 2015.
- Report of the Agribusiness Innovation Camp Held at AICAD on 19th June 2015 V2 (Annex 20). ANAFE, 2015.
- A Guide to Agribusiness Internship and Attachment in Sub-Saharan Africa (revised 2016). ANAFE, 2016.
- Involvement of UniBRAIN Consortia in ANAFE Activities and Awareness/use of the Agribusiness Curriculum. ANAFE, 2016.
- Summary of ANAFE Progress under UniBRAIN in 2014. ANAFE, 2016.
- Agribusiness Internship Report, July 2011 - Moi University. ANAFE, 2011.
- University of Ghana Meeting 24.08.2011 (Annex 1B). ANAFE, 2011.
- Report of Agribusiness Curriculum Workshop Mombasa 13.04.2012 (Annex 3). ANAFE, 2012.
- Graduate Business to Business Meeting 17th to 18th November 2014, Hilton Hotel, Nairobi (Annex 11). ANAFE, 2014.

CORAF

- Inventarie des Technologies Agricoles Commercialisables en Afrique de L'Quest et de Centre – rapport Provisorie. CORAF, 2015.

FARA

- African Agribusiness Incubator Network (AAIN) Conference and Expo 28th-30th September 2015 Declaration at Kenyatta International Conference Center, Nairobi, Kenya. FARA, 2015.
- Agribusiness Technologies for Commercialization Compendium. FARA and ICRISAT.

Bi-annual Partnership Meeting Reports 2012-2015.
Call for UniBRAIN Concept Notes. FARA, 2010.
Executive Business Report: FARA/UniBRAIN visit to Finland. FARA.
FARA–AAIN UniBRAIN Model - Discovering and Enabling African Agribusiness Talent (Hand-Out). FARA, 2015.
FARA–AAIN UniBRAIN Model: Discovering and Enabling African Agribusiness Talent. FARA.
From UniBRAIN to Africa Agribusiness Incubator Network (AAIN), the Journey, 2012-2016. Program Completion Report. FARA. 2016.
Global Report on Partnership Meetings 2012-2015. FARA, 2016.
Inclusive Agribusiness Development and Gender Mainstreaming in Incubation. FARA.
Monitoring indicators: Cumulative performance by incubator (December 2015). FARA, 2015
Opportunities for Commercialization and Research under the Banana, Coffee and Sorghum Value Chains in Kenya and Uganda.
Programme Document UniBRAIN Implementation Phase, January 2012 – December 2015.
Realising the Potential of Africa's Youth: Linking University Education, Research and Business in Sustainable Agriculture. FARA.
Reengineering Africa's Future through Agribusiness Incubation. FARA, 2015.
Reengineering Africa's Future through Agribusiness Incubation for Job and Wealth Creation. FARA.
Technologies for Agri-Business Development. FARA, 2014.
The UniBRAIN Model. (PowerPoint Presentation by Dr. A. Ariho).
UniBRAIN Annual Report 2011, FARA, 2011.
UniBRAIN Annual Report 2012, FARA, 2012.
UniBRAIN Annual Report 2014, FARA, 2014.
UniBRAIN End of Project Report. FARA 2017.
UniBRAIN Inaugural Conference Hosted by the Forum for Agricultural Research in Africa (FARA) at the FARA Secretariat, Accra, Ghana, 19 – 20 April 2011. FARA, 2011.
UniBRAIN Model - Agribusiness and Risk Management Symposium 2014 (PowerPoint Presentation by Dr. A. Ariho). FARA, 2014.
UniBRAIN Programme Document Review Workshop, World Agroforestry Centre, Nairobi – Kenya, 25-26 July 2011, Workshop Report. FARA and ANAFE.
UniBRAIN Summary Progress Report 2012. FARA, 2015.
UniBRAIN Web Links and Publications Updates October 2015.
UniBRAIN Workshop on Strategies for Effective Monitoring and Evaluation, October 25 -26, 2010, Nairobi, Kenya. FARA, 2010.

AIICs

AAIN Business Plan 2016-2020 (Draft). FARA, 2016.
ABP Operational Review 2013.
ABP Progress Reports.
ABP Sustainability Plan 2016-2020. ABP, 2015.
AgBIT Progress Reports.
AgBIT Revenue and Sustainability Plan. AgBIT, 2015.
Business Plans 2012 from the Six AIICs.
CCLEAR Annual Report 2013-2015. CCLEAR 2016.
CCLEAR Sustainability Plan 2016-2020. CCLEAR, 2015.
CURAD Operational Review 2013.
CURAD Progress Reports.
Handbook Client Management (Template). FARA. 2012.
Handbook Incubator Management (Template). FARA, 2012.

Lessons Learned Presentations from Five AIICs.

Revised Business Plan 2013 from the Six AIICs.

SVCDC Sustainability Plan 2016-2020. SVCDC, 2015.

Sub-Regional Organizations

ASARECA and CCARDESA Quarterly Progress Reports from 2015.

ICRISAT

Quarterly Progress Reports during 4th Quarter 2011 to 3rd Quarter 2015.

Consultancy Reports

Africa Commission Initiatives on Realising the Potential of Africa's Youth: Linking university education, research and business in sustainable agriculture (UniBRAIN). Review Report (Draft). 2011.

Consultancy to Determine the Financial Management System of the UniBRAIN Programme During the Implementation Phase. 2011.

Consultancy to Determine the Roles and Responsibilities of the UniBRAIN Partner Institutions, 27 May 2011 (Draft report). 2011.

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